

Capitalizing on Containers:

Assessment of an Agricultural Development Opportunity for Northern Illinois

**A Report to the City of Rochelle, Illinois
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Executive Summary

It is hard to imagine a part of the country where there is greater potential for growth in containerized exports of agricultural products. Northern Illinois is where agriculture meets the intermodal network, and a new logistics pattern for Illinois farm exports has taken root.

Nearly every day, ocean containers loaded with Illinois corn, soybeans, and DDGS¹ are being trucked to modern intermodal terminals in Rochelle and Elwood for rail transport to the U.S. West Coast, where the “boxes” will be loaded onto giant container vessels for delivery to customers in Asia. This is in contrast to the traditional channel of barge transport down the Mississippi River for transfer to oceangoing bulk carriers.

What is driving this new business? A combination of thousands of containers, arriving from Asia loaded with consumer goods and looking for cargo for the return trip; fluctuations in freight rates, which sometime favor the container channel over tradition bulk channels; and simple demand – overseas buyers who, for reasons ranging from logistical convenience to the desire to know with confidence the identity of what they are importing, prefer to receive product in containers.

Purpose of the Report

The primary purpose of this report is to shine some light on the business of containerized exports of Illinois agricultural products – particularly corn, soybeans, and DDGS.

This is a comparatively young, niche business that appears to be growing larger year by year. And it is a business that holds promise for farmers, the rail-intermodal and trucking industries, agricultural exporters – even to a small degree our country’s balance of trade.

Many people in the farm and transportation sectors have begun to take notice. They are asking, “What exactly is going on?” And, “How can we participate and benefit?”

Likewise, state and local governments are taking notice; and it was due to the collaboration of the Illinois Department of Commerce and Economic Opportunity (DCEO) and the City of Rochelle that the work represented here was accomplished.

¹ DDGS is distiller’s dried grains with solubles, a co-product of ethanol production that is used in animal feed.

Rochelle Forum

This report begins with a description of the results of the “Rochelle Forum,” held in September 2006. At this meeting of current and prospective stakeholders, the Global III intermodal facility was visited, following which the group received presentations rich with information and ideas. The forum concluded with a series of focus groups, out of which came numerous suggestions for how both the public and private sectors might work – and collaborate – to enhance the prospects of this emerging business.

Among many valuable facts and insights shared that day, the head of Will County’s Center for Economic Development observed that, “The Chicago region is the sweet spot of the global supply chain, with millions of containers entering and departing every year. Agricultural products could be our best bet to fill those outbound empties.”

Exports by Container

In the report section titled “Exports by Container” we have attempted to describe how containerization has grown and where product is being shipped. We have observed, for example, that Taiwan, one of the largest customers for U.S. corn, is expected to import around 800,000 metric tons (MT) of containerized product this year, which is 16 percent of the anticipated total of their U.S. corn imports.

We also have described the agricultural container “freight chain,” including descriptions of actual export operations involving Illinois DDGS and soybeans.

Creating Value

There is considerable value to be created through containerized exports of Illinois agricultural products. For example, new overseas animal-feed markets are being developed for DDGS, and much of this product is being transported by container. The Illinois corn grower is the coincidental beneficiary of these containerized exports.

The container option for agricultural exports increases competition, putting downward pressure on freight rates generally. This has the potential to leave a little more of the revenue from Illinois farm exports in the pocket of the Illinois farmer.

System Improvement

We have made some suggestions on how to “improve the system” – that is, how to make the container channel more efficient. This report section reflects and expands upon the comments of stakeholders at the Rochelle Forum.

Among the system's shortcomings that need to be addressed are those in regional transportation planning, the capacity of rural roads and bridges, the procedures for truck overweight permitting, container transloading facilities, centers for container staging and storage, and the availability of grade-certification specialists.

Conclusions and Recommendations

Not surprisingly, we conclude with our view that foreign demand for containerized corn, soybeans, DDGS – and other bulk agricultural commodities from Illinois – will continue to grow. We also express confidence that Illinois' farm sector, broadly defined – farmers, agribusinesses, industry associations, and government – has the capacity and the smarts to meet that demand.

Our recommendations are numerous, ranging from enhanced freight planning and road improvements to the “batching” of phytosanitary certifications to accommodate the difference between a container and an oceangoing bulker. And not unimportantly, we recommend that the various actors in the container freight chain get “on the same page.”

Regional Planning Appendix

Among our appendices is an item on regional freight planning that invites close reading. If there is a broader context for this report, it is the issue of collaborative freight planning among all stakeholders.

The farm-sector didn't really figure in the equation several years ago, when the Burlington Northern Santa Fe Railway and the Union Pacific Railroad decided to invest nearly \$400 million in the construction of new intermodal terminals in Will and Ogle Counties, respectively. In simple terms, they were built in Chicago's hinterland to reduce the cost of moving freight through the antiquated rail systems and congested roadways of the metropolis.

The rural locations of these “ramps” created an unintended beneficial consequence for the rural economy: an abundance of shipping containers that were being returned overseas – empty. An increasing number of participants in the agricultural supply chain are taking advantage of this new transport option.

To maximize opportunities a few decades out, we must begin with strategic thinking today – with dialogue among businesses throughout the global supply chain, related trade associations, economic-development agencies, and all levels of government. Leadership from, and collaboration among, the Illinois Departments of Commerce and Economic Opportunity, Agriculture, and Transportation can help build this export enterprise into an enduring asset that provides long-term benefits to agriculture, the transportation sector, and the state's overall economy.

1.0 Regional Forum: Rochelle, Illinois, September 6, 2006

1.1 Purpose and Participants

Knowing that many local stakeholders would benefit from an open discussion about this emerging business opportunity, the consulting team decided to make a forum the lynchpin of the study process. The event was titled “Capitalizing on Containers: Assessment of an Agricultural Development Opportunity for Northern Illinois.”

The purpose of the Forum was twofold:

- To present interim findings about agriculture’s current and potential use of container shipments via Union Pacific’s Global III Intermodal Facility in Rochelle (Ogle County) and BNSF Railway’s Logistics Park Chicago (LPC) in Elwood (Will County).
- To host a discussion designed to generate strategic thinking about how these transportation assets can best serve the agricultural economy.

Working with staff from the Will County Farm Bureau, the City of Rochelle, and the Illinois Farm Bureau, the consulting team established a September 6, 2006, forum date to accommodate farm leaders’ fall harvest schedules. E-mail invitations were sent to nearly 60 individuals, including contributors to the study and/or individuals expressing an interest in its outcome.

Forty people took part in the event, including staff from the state’s leading farm and commodity organizations; a half-dozen farmers from DeKalb, Kane, and Ogle Counties (mainly current board members of local or state farm bureaus); and executives from three grain-handling companies. Also included were representatives from two agricultural lending institutions, Rochelle’s new ethanol plant, local economic development organizations, the Chicago Area Transportation Study (CATS), Northern Illinois University, and the Illinois Department of Commerce and Economic Opportunity.

1.2 Tour of the Global III Intermodal Terminal

Forum participants met early in the morning of September 6 in the Holcomb State Bank parking lot for a bus trip to the Global III Intermodal Facility, which is located on a vast 1,200-acre site in rural Flagg Township, several miles southwest of the city of Rochelle. Global III terminal operations manager Kevin Morrison served as tour guide.

The first stop on the Global III tour was the operations management room, which is lined with a bank of large windows overlooking the facility’s inbound truck

lanes. UP staff can see incoming trucks while reviewing their licensing and loading requirements on computer screens. Morrison said pre-registered truckers can complete the inspection process and enter the facility in as little as 60 seconds. (Forum participants later noted that the initial registration process can take several hours. The registration applies to individual drivers and their trucks.) During a brief visit, several trucks transporting containerized grain were observed entering the terminal.²

The second stop was the expansive tarmac, where trains are unloaded and reloaded and inbound and outbound containers are staged and stored. Each incoming truck with a load is assigned a parking stall to drop off the chassis, with the container still on it. Often, the trucker then proceeds to pick up an empty container for carriage to another shipper. In most cases, the trucker drops a container and picks up another in less than a half hour. Later, a spotter tractor picks up the whole chassis, with the container, and transports them to alongside the train. A straddle crane then picks the container off the truck chassis and places it onto a flatbed railcar or rail car.

According to Morrison, volumes at Global III have grown from 47 trains per week to 77 trains per week in 2006. Each train carries an average of 250-280 containers. In addition, 74-78 eastbound trains stop in Rochelle before continuing on to Global I (Chicago) and Global II (Northlake).

UP will perform approximately 175,000 lifts in 2006 – far below its advertised capacity of 750,000 annual lifts, suggesting that there is considerable room to grow an agricultural container export business in the next few years.³

² Truckers typically own the tractor but often not the trailer. They depend on the railroad to ensure the good condition of the trailer that carries the container. Several truckers say BNSF subcontractors at LPC do a good job of fixing flat tires and broken lights but that the trailer maintenance service at Global III leaves much to be desired.

³ Interview with Gerald Rawling of the Chicago Area Transportation Study, December 3, 2006. Rawling took part in the September 6 tour.

1.3 Key Observations from Forum Presenters

The forum meetings took place in the Holcomb State Bank's banquet room. Seven presenters were dispersed around the room. Here are the most salient points from their presentations:

- ***Containerized shipment of farm products from intermodal terminals represents a great opportunity for building our local economy. What we want to do here today is start the thought process. We know the ingredients, but we're not sure of the recipe.***

Forum moderator Lee Prunty
Dealership Owner, Walker-Schork International Inc., Rochelle

- ***Forty-six groups in the state of Illinois want to build ethanol plants. There's going to be tremendous growth in the production of DDGS. One way to ship it overseas is via container. The shipping rates are quite favorable for containers right now, but this could change suddenly.***

Phil Thornton
Value Enhanced Project Director, Illinois Corn Growers Association,
Bloomington

- ***Containerized shipment of soybeans is a niche representing five percent of the export market. Illinois farmers, more than those from any other state, are uniquely positioned to benefit.***

Judd Hulting
Domestic Marketing Programs Manager, Illinois Soybean Association,
Bloomington

- ***To get started in the container loading business, local grain handlers need to partner with someone who can tell you the logistics and who has the overseas contacts needed to make sure you get paid. Loading containers requires special handling comparable to identity-preserved grains.***

Jim Black
General Manager, Maplehurst Farms, Lynnville Township, Ogle County

- ***The Chicago region is the sweet spot of the global supply chain, with millions of containers entering and departing every year. Agricultural products could be our best bet to fill those outbound empties...The question is how to integrate the farm-sector component into traditional economic development efforts. We need to learn how to talk to each other.***

John Grueling
President/CEO, Will County Center for Economic Development, Joliet

- ***The public sector builds infrastructure, and the private sector figures out how use the improvements to make money. The City of Rochelle got a federal grant to create a short-line railroad linking the Union Pacific and Burlington Northern Santa Fe. Some railroad officials accused us of wanting “price suppression.” That’s true. When you take away their monopoly, railroads can’t charge whatever they want. Competition is good. The two terminals are in competition. Customers benefit when people are fighting for their business.***

Ken Wise
Economic Development Director (retired), City of Rochelle

- ***Adding up volumes from the intermodal terminals in this region, we determined that Chicago is the world’s fourth largest “port” behind Hong Kong, Singapore, and Shanghai – not a seaport, but an inland port. Freight transportation is one of the defining industries of northeastern Illinois. But we’re also the nexus of the tremendous trade imbalance. Of every four incoming loads, only one outbound load goes back full. People can either store the container, send it back empty, or find a load. The issue in front of us is how to fill the growing volume of empty containers. I hope that one day this meeting will be remembered as the first rung on the ladder to the next big thing.***

Gerald Rawling
Director of Operational Analysis, Chicago Area Transportation Study, Chicago

1.4 Key Findings of the Group Discussion

A group discussion followed the seven presentations. The key findings are recorded below:

1. Ocean freight advantages of \$25 - \$40 per metric ton (MT) via U.S. West Coast seaports drove agricultural product movement to containers.

2. Containers are easy to track, much like UPS or FedEx packages. This gives buyers flexibility for something resembling "just in time" delivery.
3. Product quality control improves with container shipments: smaller lots, less handling, reduced blending, and more consistency.
4. Approximately five percent of US soybean/soybean meal (SBM) exports move via container.
5. China loads 75 percent of the world's containers. They buy 40 percent of US soybean/SBM exports.
6. Increased production of ethanol and bio-diesel means more DDGS and SBM available for export.
7. International trade is complex. Building relationships with overseas buyers is difficult. It takes time to develop trust. Smaller shippers have little leverage to ensure that foreign buyers perform on contract terms. Payment from overseas buyers becomes a risk.
8. Partnering with experienced exporters reduces risk and flattens the learning curve. Major transloaders have been secretive about how transactions work and who the buyers are. That's changing as more overseas buyers want containerized products.
9. Investments are being made to improve transloading facilities, making truck unloading and containerization more efficient. Grain elevators are delivering product to transloaders for containerization. Loading 100 containers per day is becoming standard for the largest transloaders: DeLong and Scoular (near Elwood) and Consolidated Grain and Barge (near Rochelle).
10. Arranging for container pickup and delivery through steamship lines (SSLs), drayage companies, and brokers can be complex and time consuming.
11. The system of grain inspection can be slow. It can take up to five days for a certified grade to be final, by which time the container already may be moving to the West Coast. Any problem with quality is then very expensive to correct – not to mention that payment by the overseas buyer typically is contingent on documentation of a mutually agreed certified grade. Shippers do not face such risks when using barges or rail cars.
12. Overweight containers are difficult to unload. Without platform scales at the transloading point, it's a best guess as to exact weights.

13. Increasing numbers of containers in storage in the region are forcing SSLs to look outside the intermodal terminals for staging-and-storage space. Zoning, permits, and surface transportation conditions are hampering this effort. There needs to be planning at a regional level to address these issues.
14. Little has been done to incorporate agriculture into regional economic- and industrial-development planning.
15. SSLs are obvious allies/partners with agricultural shippers to increase the number of container loadings.
16. Importers, SSLs, shippers, and farmers are key parties to these export transactions.
17. All the services are in place regionally to expand the use of containers for outbound shipments.
18. Agriculture has the production capacity to significantly increase the use of containers for outbound shipments.

1.5 Breakout Sessions

Each forum participant took part in one of three break-out sessions: farm supply, business infrastructure, or government policy. The groups discussed their particular topics; then, a selected representative or each group presented a summary of their findings, which are summarized as follows:

➤ **Farm Supply**

- Grow what the markets want.
- Focus on what we're good at producing.
- Increase on-farm storage.
- Consider the effects of increased ethanol production on availability of corn for export.
- Improve transloading efficiency to attract more farm-direct supply.
- Recognize that grain handling for containers is different from traditional handling methods.

➤ **Business Infrastructure**

- Streamline the highway overweight permitting system through better coordination among various jurisdictions.
- Build transloading and staging areas close to intermodal terminals.
- Seek private development of public transloading facilities.

- Design facilities to ensure capability of “food grade” container loading.
- Recognize the investment risks related to uncertainty about long-term demand for container shipments.
- Build market stability through efforts to improve relationships between farmers and end-users.

➤ **Government Policy**

- Establish central points for grading and certification, while reducing the cost and improving speed.
- Subsidize the cost of grading and certification.
- Consider the possibility of certifying farmers to inspect their own grain.
- Invest in the roads, bridges, and overpasses that will improve access to transloaders and intermodal terminals.
- Increase weight limits of rural roads – consistent with interstate highways – and streamline the truck overweight permitting process.
- Enact zoning policies that allow additional container staging-and-storage facilities to be built.
- Provide incentives for private-sector development of container staging-and-storage facilities with on-site grading, certification, and transloading.
- Consider public development of transloading facilities for sale or lease to privately owned companies.
- Broaden criteria for the use of public development funds (job creation/retention measures don’t account for the long-term value of agricultural production systems that use renewable resources).
- Educate farmers about international trade generally and exporting specifically.
- Carry out in-country market identification focused on potential importers of containerized agricultural products.
- Develop trade missions and reverse trade missions around the export of agricultural products in containers.
- Sponsor opportunities for all stakeholders to be heard; including farmers.
- Use incentives (credits/taxes) to spur movement and usage of containers through staging areas.
- Design and execute plans on a regional basis.

2.0 Exports by Container

2.1 History of Container Transportation

The Illinois farm sector has begun to use this new shipping option with the apprehension that containers may never be more than a niche in a bulk-transport and export system dominated by barges, train hopper cars, and oceangoing bulk vessels. This reluctant embrace seems to mirror the initial adoption of the container itself. This transport method, which began as an experiment a half century ago, has evolved into a cornerstone of the global supply chain. It's too soon to tell whether the agricultural industry could be similarly transformed. Yet, as a new logistics pattern takes root in the northern Illinois, there may be a lesson in that old saying about history repeating itself.

The first container shipment took place in 1956 when 58 aluminum truck bodies were loaded atop a tanker and transported from Newark to Houston.

Many in the industry sought to stifle the development of what they called a passing fad. Ocean carriers, railroads, and truckers were wedded to different systems. Labor leaders fought to protect longshoremen. Established ports wasted millions of dollars to refurbish traditional piers and warehouses in response to an innovation that offered great efficiency. A 4,000-mile voyage for a shipment might consume 50 percent of its costs in covering the two ten-mile movements through two ports. Elimination of the high cost of piece-by-piece handling was the first savings presented by containers.

In *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*, economist Marc Levinson writes that "Government reacted with confusion trying to figure out how to capture its benefits without disturbing the profits, jobs, and social arrangements that were tied to the status quo."⁴

A decade after that maiden voyage, the U.S. military's need to get materials into Vietnam proved the merit of this new approach to moving freight. The international trade of manufactured goods began to soar. Land transportation adapted quickly. Steamship lines built huge vessels to handle containers. A seamless intermodal system of shipping took form among ships, trucks, and trains. As the rapid exchange of cargo from one transportation carrier to another became the norm, manufacturers discovered that they no longer needed to do everything themselves. Vertical integration gave way to just-in-time manufacturing systems that outsourced many components and kept inventory to a minimum. Containerization made this precision performance possible. Logistics used to be a military term. However, by 1985, Levinson writes, "logistics

⁴ Marc Levinson, *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger* (Princeton, NJ: Princeton University Press, 2006).

management – the task of scheduling production, storage, transportation, and delivery – had become a routine business function.”⁵

By 2005 there were an estimated 13 million containers in circulation worldwide representing an overall capacity of approximately 20 million TEUs.⁶ Reportedly there are more than 4 million containers in use at any given time in the U.S. trades.⁷

In 2004, more than 23.5 million TEUs of containerized cargo were shipped in or out of the U.S. on around 1,050 individual containerhips making more than 18,000 port calls.⁸

The lesson for Illinois agriculture isn't that transportation technology triggered new efficiencies so much as that entrepreneurs discovered ways to put this innovation to practical use. This entrepreneurial activity fostered organizational changes through which businesses reshaped themselves to exploit the new technology. Levinson concludes that containerization “greatly increased the range of goods that can be manufactured economically at a distance from where they are consumed, the distances across which those products can feasibly be shipped, the punctuality with which that movement occurs, and the ability of manufacturers to combine inputs from widely dispersed sources to make finished products.”⁹

It's not clear when the use of containers for exporting corn, soybeans, and DDGS began. Anecdotally – and based on when researchers and government agencies began tracking statistics – it seems not to have been a significant practice until the 1990s.

Jerry Sroja, Maersk's Midwest equipment manager, told us that he has worked for Maersk since 1978 but that they didn't begin shipping containers filled with agricultural products until LPC opened in Elwood in 2003. “It was like any other commodity,” he recalled. “We started receiving bookings, and we provided empties to those customers. It just grew and grew.”¹⁰

⁵ Ibid.

⁶ A TEU is a “twenty-foot equivalent unit” (i.e., equal to a 20-foot container). A 40-foot container has a capacity of two TEUs.

⁷ World Shipping Council, as cited in “Global Container Trade and Industry Information and Statistics”: http://www.ibm.com/news/ch/de/2005/09/21b_backgrounder.html.

⁸ Ibid.

⁹ Marc Levinson, *The Box*.

¹⁰ Interview with Jerry Sroja of Maersk Line, November 30, 2006.

Sroja explained that these shipments began in Illinois, followed by Kansas City, and then Columbus, Ohio. “Those are our three major loading points for grain,” he said. “We’ve looked for other locations, but there hasn’t been the supply of empties.”

2.2 Container Export Destinations and Volumes

As far as we know, no one in the past five years has published in one place the detailed statistics on agriculture-related containerized exports. Five years ago, in November 2001, researchers Kimberly Vachal and Heidi Reichert issued their excellent report on containerized grain and oilseed exports.¹¹ They documented and described trends in containerized grain shipments, shipper origin by state, relative shares among various grains, tonnages loaded at U.S. ports of export, and tonnages by foreign destination port. Now somewhat out of date, their report remains a valuable reference.

Ideally, for this section of our report, we would have liked to update Vachal and Reichert. But that was beyond our scope and resources. Instead, we have attempted to glean from a variety of secondary sources enough information and statistics (1) to confirm the widespread impression that containerized agricultural exports are on the increase and (2) to paint a relatively up-to-date picture of where containerized exports of corn, soybeans, and DDGS are going.

Containerized Exports of Agricultural Products

“Agricultural products” is a term covering a wide variety of items ranging from soybeans to sausages.¹² As such, it is a rather cumbersome classification for purposes of this report, which is focused primarily on soybeans, corn, and DDGS. Moreover, detailed data on containerized exports of U.S. agricultural products are hard to come by – and even harder to gather at the state level.

¹¹ Kimberly Vachal and Heidi Reichert, *U.S. Containerized Grain and Oilseed Exports: Industry Profile: Phase I*, U.S. Department of Agriculture, November 2001.

¹² For a detailed definition, see the “F.A.S U.S. Trade Agricultural Definition”:
www.fas.usda.gov/ustrade/USTAgDef.asp?QI=

A somewhat outdated set of statistics from 2001 nevertheless illustrates which agricultural products were being exported by container at the time:

Top 10 Containerized Agricultural Products Exported from the Ports of Los Angeles, Long Beach, and Oakland in 2001

Commodity	TEUs	Share of Total
Animal feed	121,175	17%
Cotton	90,411	13%
Fresh fruit	78,350	11%
Beef	72,212	10%
Foodstuffs	42,782	6%
Leather/hides	33,587	5%
Vegetable (frozen and fresh)	32,478	5%
Wine	25,955	4%
Poultry	23,873	3%
Edible nuts	22,204	3%
Other	160,584	23%
Total	703,611	100%

Source: Agricultural Ocean Transportation Trends, U.S. Department of Agriculture, July 2002.

Much more recently, in August 2006, the USDA's *Grain Transportation Report* (GTR) commented that "the trend toward containerization is evident in all agricultural shipping" and observed that while 14 percent of agricultural exports were shipped in containers in 2001, the proportion had risen to 19 percent by 2005.¹³

Containerized Exports of Grain

"Grain" also is a broad category, encompassing wheat, barley, oats, corn, sorghum, soybeans, flour, animal feed (excepting dog and cat food), bran sharps, and other residues.

Statistics recently provided by the USDA illustrate a significant increase in the use of containers for grain exports beginning in 2004:

U.S. Waterborne Containerized Grain Exports, 2000-2005

Year	2000	2001	2002	2003	2004	2005
Quantity (MT)	142,724	133,620	127,038	129,722	157,062	237,056

Source: U.S. Department of Agriculture, 2006; data from Port Import Export Reporting Service (PIERS).

¹³ *Grain Transportation Report*, U.S. Department of Agriculture, August 3, 2006.

The large increase in containerized shipments from 2004 to 2005 was attributed to growing Asian demand for identity-preserved (IP) grains. USDA has estimated that exports of containerized grain to Taiwan increased by around 400 percent from 2004 to 2005, causing that country to supplant Japan as the top overseas destination for U.S. grain shipped in containers.¹⁴

GTR regularly covers containerized grain exports, particularly to Asia. According to this publication, 80 percent of all containerized grain exported from the U.S. is bound for that region.¹⁵ The table below illustrates the quantities of such exports:

Year-to-Date, Mid-Year 2006, Shipments of Containerized Grain to Asia

Commodity	TEUs	Share of Total
Animal feed	33,313	42%
Soybeans	24,047	30%
Corn, maize	13,161	16%
Residues of starch	6,002	7%
Wheat	2,084	3%
Other	1,600	2%
Total	80,207	100%

Source: *Grain Transportation Report, August 3, 2006.*

GTR also has reported that 2 percent of all U.S. grain exports were shipped in containers in 2004, while containerized grain shipments to Asia reached 3 percent of the total that year. The figures for 2005 were 4 percent of all grain exports and 5 percent of such exports to Asia, respectively.¹⁶

Moreover, throughout 2006, containerized grain exports to Asia were running well above the historical norm. In August these exports exceeded the three-year average by 119 percent – reaching some 18,000 TEUs in that month.¹⁷

USDA researchers Vachal, VanWechel, and Reichert reported in the results of a 2003 shipper survey that soybean exports accounted for 73 percent of the respondents' volume of containerized grain and oilseed exports.¹⁸

Around 45 percent of containerized grain exports are loaded onto container vessels in the ports of Los Angeles and Long Beach.¹⁹

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Kimberly Vachal, Tamara VanWechel, and Heidi Reichert, *U.S. Containerized Grain & Oilseed Exports: Industry Profile and Survey: Phase II*, U.S. Department of Agriculture, July 2003, p.8.

Containerized Exports of U.S. Corn

The top five importers of U.S. corn in 2005 were Japan, Mexico, South Korea, Egypt, and Taiwan, collectively accounting for around \$3.5 billion in U.S. export earnings. Among other major destinations for U.S. corn are Colombia, Canada, Israel, Morocco, the Dominican Republic, Syria, and Algeria.²⁰

As with soybeans, most U.S. export corn is shipped in oceangoing bulk vessels, not containers. Taiwan, however, one of the largest customers for U.S. corn, is expected to import around 800,000 MT of containerized product this year, 16 percent of the anticipated total of their U.S. corn imports.²¹

Recent and projected volumes of containerized exports of corn from the U.S. are included in the following table:

Estimated Recent and Projected Exports of Containerized Corn from the U.S. for Selected Asian Destinations (MT)

Country	2003	2004	2005	2006*	2007*	2008*
Indonesia	0	11,516	46,523	0	0	0
Japan	6,000	5,000	6,000	5,000	6,000	5,000
S. Korea	22,148	28,789	31,957	34,000	36,000	37,000
Taiwan	0	37,000	48,300	800,000	500,000	600,000
Totals	28,148	82,305	132,780	839,000	542,000	642,000

* Projected.

Source: U.S. Grains Council, 2006; data from U.S. Department of Agriculture, Federal Grain Inspection Service (USDA), local customs services, and council estimates.

The U.S. Grains Council has cautioned that its robust projections for Taiwan should be seen in light of (1) serious congestion at the port of Kaohsiung and (2) poor execution of shipping and phytosanitary documentation by U.S. shippers – each of which could have the effect of redirecting Taiwanese importers away from containers and back to bulk vessels.²²

Listed below are some of the key Asian ports receiving containerized corn from the U.S.:²³

¹⁹ Ibid.

²⁰ U.S. Import and Export Merchandise Trade Statistics; U.S. Bureau of the Census; USA Trade Online, 2006.

²¹ *Global Update*, U.S. Grains Council, November 9, 2006.

²² U.S. Grains Council, 2006.

²³ Ibid., 2006.

- China: Hong Kong, Dalian, Shenzhen, Shanghai
- Indonesia: Pelabuhan
- Japan: Yokohama, Tokyo/Chiba, Nagoya
- Malaysia: Port Klang, Pasir Gudang, Penang
- S. Korea: Pusan
- Taiwan: Kaohsiung
- Vietnam: Haiphong, Saigon

Containerized Exports of U.S. Soybeans

The top five importers of U.S. soybeans in 2005 were China, Japan, Mexico, Taiwan, and Indonesia, collectively accounting for around \$4.7 billion in U.S. export earnings.²⁴

GTR listed the top importers of U.S. soybeans for the period September 1, 2005, to August 31, 2006, as China, Mexico, Japan, the European Union (25 countries), and Taiwan, respectively. These five together imported some 20.3 million MT of U.S. soybeans.²⁵

Inarguably, most of this product was shipped in bulk vessels, not containers. USDA researchers reported that a mere 1.8 percent of U.S. soybean exports were transported in containers in 2002 (up from 0.4 percent in 1992).²⁶

From 1992 through 2004, U.S. containerized soybean exports grew from 6,100 TEUs to over 45,000 TEUs, the 2004 figure representing 4.0 percent total soybean exports.²⁷

Also indicative of a growth trend, *Agricultural Container Indicators*, a short-lived USDA quarterly, observed that containerized soybean shipments to Asia increased by 260% from April 2004 to April 2005.²⁸

In support of our effort to get at some of the detail of such information, the U.S. Soybean Export Council (USSEC) provided us with shipment-level statistics for waterborne exports of soybeans, soybean meal, and a variety of other soy

²⁴ U.S. Import and Export Merchandise Trade Statistics; U.S. Bureau of the Census; USA Trade Online, 2006.

²⁵ *Grain Transportation Report*, U.S. Department of Agriculture, October 26, 2006.

²⁶ Vachal, VanWechel, and Reichert, *U.S. Containerized Grain & Oilseed Exports: Industry Profile and Survey: Phase II*, p.1.

²⁷ *Container Penetration in the Bulk Markets*, DVB Group, 2005; U.S. Census data. Cited in *The Container Logistics Channel for Exports of Soybeans and Soybean Meal*, Pollock Logistics Consulting, 2005.

²⁸ *Agricultural Container Indicators*, U.S. Department of Agriculture, 2nd quarter 2005.

products (to be referred to as “soybeans”) covering the period October 2002 to July 2006. The emerging snapshot of containerized soybean exports is largely consistent with what has been observed and reported by others – for example that key load ports include Long Beach, Los Angeles, and Norfolk; and that prominent destinations include Taiwan and Japan.

But containerized soybeans are being shipped from several U.S. ports; and many countries are importing containerized U.S. soybeans. The table on the following page illustrates some of this detail.

Among other countries apparently importing U.S. soybeans by container are China, Germany, Greece, Italy, Jordan, Lebanon, Russia, Turkey, and the United Arab Emirates.

Not captured in these statistics (because they report only waterborne shipments), is the likelihood of substantial containerized exports to Mexico – a major importer of U.S. soybeans – by rail and truck.

It is notable that soybean-laden containers are shipped from a variety of ports – not just Long Beach, Los Angeles, and Norfolk. For example, whereas Seattle and Tacoma are prominent West Coast load ports for bulk grain ships, it should be acknowledged that each also has container-handling facilities. Conversely, Norfolk, a key East Coast container port, also has a terminal where soybeans bound for Cuba are loaded onto bulkers.

The following are some of the soy products apparently exported by container during the period October 2002 to July 2006, based on ships’ manifests.²⁹

- Soybeans
- Yellow soybean better
- Organic food grade soybeans
- Soybean pellets
- Soy flour
- Nutrisoy flour
- Defatted soybean flour
- Corn soybean meal
- Isolated soy protein
- Isolated soy protein IP non-GM
- Textured soy protein
- Soy fiber
- Soybean white flake
- Kanda soybeans
- Kin soybeans
- Vinton 81 soybeans
- Soybean grits
- NGMO high protein soybeans
- Soybean extract residue feed
- Soybean organic white hilum

According to American Soybean Association-International Marketing (ASA-IM), Japan imports around 500,000 MT of IP food-grade soybeans each year from the

²⁹ U.S. Soybean Export Council, 2006. Regarding “Non-GM” and “NGMO”: GMO is the abbreviation for “genetically modified organism.”

U.S. Of that quantity, it is estimated that some 400,000 MT – 80 percent – will be shipped in containers in 2006.³⁰

Selected Containerized Exports of U.S. Soybeans, October 2002 to July 2006³¹

Export Destination	U.S. Container Loading Ports
Australia	Los Angeles, Norfolk, Seattle
Belgium	Charleston, Houston, New York, Norfolk, Savannah
Chile	Baltimore, Charleston, New York, Norfolk
China	Los Angeles, Houston
Indonesia	Long Beach, Los Angeles, Norfolk, Oakland, Seattle, Tacoma
Ireland	Houston
Israel	Norfolk
Japan	Long Beach, Los Angeles, Norfolk, Oakland, Seattle, Tacoma
Kuwait	Norfolk, Newport News
Malaysia	Long Beach, Los Angeles, Norfolk, Oakland, Seattle, Tacoma
Netherlands	Charleston, Houston, Norfolk, Savannah
Philippines	Long Beach, Los Angeles, Norfolk, Oakland, Seattle, Tacoma
Portugal	Norfolk
South Korea	Long Beach, Los Angeles, New York, Norfolk, Seattle, Tacoma
Spain	Norfolk
Saudi Arabia	Houston, Norfolk
Singapore	Los Angeles, Norfolk
Taiwan	Baltimore, Long Beach, Los Angeles, Norfolk, Oakland, Seattle, Tacoma
Thailand	Long Beach, Los Angeles, Norfolk, Oakland, Seattle, Tacoma
United Kingdom	Baltimore, Norfolk, Oakland
Vietnam	Long Beach, Los Angeles, Norfolk, Oakland

Source: U.S. Soybean Export Council, 2006.

It would appear from the USSEC data that a large proportion of the U.S. soybeans exported to Vietnam during 2005 and 2006 was shipped by container

³⁰ Ibid.

³¹ The list is based on documented waterborne shipments of 25 MT or less, an imperfect proxy for evidence of containerized shipments. The statistics, while detailed as to product, shipper, load port, destination, and weight, did not indicate if the shipments were by container or in a bulk vessel (or by break bulk, for that matter, as could be the case with bagged product on pallets).

and that most of these containers were transshipped at Singapore, Hong Kong, or Kaohsiung, Taiwan.

In summary, containerized soybean exports are a niche market, if one considers the comparatively gigantic tonnages that continue to leave U.S. ports on oceangoing bulkers. That said, by all appearances containerized soybean exports are on the rise. The product is sourced from a variety of states, including Illinois.³² Several U.S. ports are loading vessels with containerized soybeans, and these exports are going to 40 or more countries.

Containerized Exports of U.S. DDGS

Historically, DDGS exports have been effected via barge on the Mississippi River to New Orleans and then transferred onto a bulk vessel. Over the last two years there has been a strong increase in containerized exports, due partly to relatively cheap container freight compared to bulk freight and also due to numerous new ethanol plants in locations where river transit is less practical than the container channel.

As with all containerized exports of U.S. agricultural products, reliable and detailed statistics on DDGS are not easy to obtain. As such, reports from secondary sources vary considerably in their estimations.

The Commodity Specialty Company tracked DDGS exports using U.S. government agriculture, trade, and census data. They found an increase from 164,000 MT of DDGS exports in 1988 to an estimated 1.3 million MT in 2006. Major destinations included Canada, Ireland, Mexico, Malaysia, the Netherlands, Portugal, Spain, Taiwan, and the United Kingdom.³³

The National Corn Growers Association reported that U.S. ethanol plants produced some 7.3 million MT of DDGS in 2004, of which only 11 percent were exported. Observing that DDGS export volumes had been “relatively static” for a decade (within a flattish range of 600,000 MT to 800,000 MT from 1995-2005, peaking in 2001), the organization warned that, “Without significant growth in exports or domestic swine and poultry markets, the ethanol industry may soon be facing an oversupply of DDGS.”³⁴

³² Ibid. The USSEC data report numerous shipments of less than 25 MT from Illinois shippers. While this is not direct evidence of the containerized export of Illinois soybeans, it can be assumed that at least some of the product was grown on Illinois farms.

³³ Reported by Commodity Specialist Company, [2006]: <http://www.gabioenergy.org/ppt/Markham--AgOutlookForumREVISED072106%20ppt%204-181.ppt%20georgia.pdf>.

³⁴ Geoff Cooper, *An Update on Foreign and Domestic Dry-Grind Ethanol Coproducts Markets*, National Corn Growers Association, [2005]: <http://www.ncga.com/ethanol/pdfs/DDGSMarkets.pdf>.

Recent and projected volumes of containerized exports of DDGS from the U.S. are included in the following table:

Estimated Recent and Projected Exports of Containerized DDGS from the U.S. for Selected Asian Destinations (MT)

Country	2003	2004	2005	2006*	2007*	2008*
China	0	0	0	50	125	2,000
Indonesia	0	11,516	46,523	42,883	50,000	80,000
Japan	250	2,750	4,000	38,000	50,000	70,000
Malaysia	0	12,475	34,410	26,225	30,000	35,000
Philippines	0	958	11,758	48,100	52,000	57,000
S. Korea	70	625	4,843	28,000	50,000	30,000
Taiwan	775	14,476	50,023	70,000	80,000	100,000
Thailand	61	10	12,802	23,954	25,000	28,000
Vietnam	0	633	19,869	10,612	15,000	17,000
Totals	1,156	43,443	184,228	287,824	352,125	419,000

* Projected.

Source: U.S. Grains Council, 2006; data from U.S. Department of Agriculture, Federal Grain Inspection Service (USDA), local customs services, and council estimates.

In August of this year, DDGS exports to Japan reached an all-time high of 9,180 MT, more than 70 percent of which were imported from the U.S. According to the U.S. Grains Council, nearly 27,000 MT of the product were exported from the U.S. to Japan between January and August of 2006. The Council has sponsored feeding trials there for swine, layers, and dairy to promote the use of DDGS in animal feed.³⁵

In contrast, Japan imported no DDGS from the U.S. as recently as 2001.³⁶

The three Japanese ports receiving the most containerized DDGS are Yokohama, Tokyo/Chiba, and Fukuoka. The U.S. Grains Council has noted that Japan's major container terminals are not located in the same areas as the major bulk-grain ports. Therefore, inland trucking – very expensive in Japan – is needed to move containerized product to mills for processing. Moreover, only 20-foot containers are allowed on Japanese highways.³⁷

Listed below are some of the other major Asian container terminals receiving DDGS from the U.S.:³⁸

- China: Hong Kong, Dalian, Shenzhen, Shanghai

³⁵ *Global Update*, U.S. Grains Council, October 6, 2006.

³⁶ U.S. Grains Council, 2006.

³⁷ *Ibid.*

³⁸ *Ibid.*

- Indonesia: Pelabuhan
- Malaysia: Port Klang, Pasir Gudang, Penang
- S. Korea: Pusan, Kwangyang
- Taiwan: Kaohsiung
- Vietnam: Haiphong, Saigon

2.3 Illinois as an Agricultural Exporter

Total Exports

In 2005, Illinois' total exports grew by 15 percent to over \$35.8 billion, which represented 7 percent of Gross State Product. According to the Illinois Department of Commerce and Economic Opportunity (DCEO), some 670,000 Illinois jobs are supported by exports.³⁹

The top five destinations for Illinois exports in 2005 were Canada, Mexico, Japan, the United Kingdom, and Germany, respectively.

Illinois Exports of "Crop Production"

The broad category of "crop production" (agricultural products not including processed foods) ranked 11th behind machinery, chemicals, computers, and several other classes of goods exported from the state, as illustrated in the table below:

Illinois Exports (in thousands of USD), 2003-2005

CATEGORY	2003	2004	2005
Machinery manufactures	6,892,917	8,528,414	10,436,526
Chemical manufactures	3,890,967	4,617,182	5,634,744
Computers & electronic products	3,664,358	4,210,482	4,705,704
Transportation equipment	2,950,213	3,146,466	3,359,958
Electrical equipment, appliances, & parts	1,710,591	1,792,496	2,289,475
Processed food	1,297,200	1,302,395	1,520,226
Fabricated metal products	1,077,459	1,159,747	1,246,671
Miscellaneous manufactures	928,241	1,043,757	1,103,086
Plastic & rubber products	796,574	873,190	972,621
Primary metal manufactures	574,194	702,534	917,369
Crop production	255,162	357,698	544,147
Total Illinois exports	26,472,902	30,213,626	35,868,406

Source: Office of Trade and Industry Information (OTII), International Trade Administration, U.S. Department of Commerce, 2006.

³⁹ Illinois Department of Commerce and Economic Opportunity, 2006.

According to the OTII figures shown above, Illinois exports in the “crop production” category more than doubled in the period 2003-2005. The top five destinations for these exports in 2005 were Taiwan, Japan, Canada, Mexico, and Indonesia, respectively.⁴⁰

Other significant export markets for Illinois agricultural products were China (including Hong Kong), France, Israel, Spain, the United Kingdom, Pakistan, and Turkey, among others.

Illinois Exports of Corn and Soybeans

State sources report that the Land of Lincoln is America’s top producer of soybeans and number two producer of corn. More than 44 percent of Illinois grain is exported, and Illinois agricultural exports are valued at around \$4 billion per year.⁴¹

In comparative terms, Illinois is the second leading exporter of soybeans, feed grains,⁴² and related products among the fifty states.

The predominance of soybeans and feed grains (including corn) is evident in the export statistics displayed in the table below.⁴³

Value of Illinois Exports of Selected Agricultural Commodities, 2000-2004 (millions of dollars)

Fiscal Year Ending September 30	2001	2002	2003	2004	Share of 2004 total
Soybeans & products	1,135.4	1,212.2	1,361.2	1,397.8	38.2%
Feed grains & products	974.9	1,055.4	994.1	1,340.2	36.7%

Source: Illinois Agricultural Statistics – 2005, Illinois Agricultural Statistics Service, 2006. The figures for 2005 had not been published in time for inclusion in this report.

Illinois Exports of DDGS

DDGS is a co-product of ethanol production that is used in animal feeds. Exports of DDGS derived specifically from Illinois corn are difficult to quantify and document at present (and we have observed containerized DDGS produced outside Illinois being shipped through LPC).

⁴⁰ Office of Trade and Industry Information (OTII), International Trade Administration, U.S. Department of Commerce, 2006.

⁴¹ State of Illinois Business Portal, 2006: http://business.illinois.gov/io_keyIndustries.cfm.

⁴² Feed grains include barley, including malting barley; white and yellow corn; sorghum; and oats.

Nevertheless, there is no doubt that Illinois-produced DDGS is being exported (for example, see the description of shipments of containerized DDGS to China by Scoular in Section 2.4.2, herein). Moreover, the state seems destined to become a major producer of corn-based ethanol.

Illinois ethanol plants currently operate in Decatur, Lena, Pekin, Peoria, and Robinson. Illinois River Energy (Rochelle) and Avantine Renewable's second unit (Pekin) are under construction. Several other Illinois ethanol plants are in various stages of development.⁴⁴

Illinois River Energy is of particular interest, if only because it is being built so close to Global III. Vince McCabe, their chief operating officer, recently told a trucking-association gathering, "We chose Rochelle for a number of reasons, including proximity to Global III. A year and a half ago, a marketing broker wanted me to plan on shipping our distilled dry grains overseas via Elwood. Now why would I want to travel 80 miles when I can go four miles, gate to gate, from our plant to Global III?"⁴⁵

In the case of Illinois River Energy, it might be said that the containerized-DDGS-export tail is wagging the ethanol-plant-location dog.

2.4 The Container Freight Chain

Northern Illinois is where agriculture meets the intermodal network.

BNSF Railway's Logistics Park Chicago and Union Pacific's Global III Intermodal Facility are located on the western outskirts of the largest concentration of intermodal freight terminals in the Western Hemisphere – 19 such facilities in all.

As Gerald Rawling, Director of Operations Analysis at the Chicago Area Transportation Study has observed, the Chicago megalopolis is one of the

⁴⁴ *Illinois Dry Distillers Grain and Soluble Project*, PowerPoint presentation, Illinois Corn Marketing Board, 2006: http://www.grains.org/galleries/default-file/DDGS_Project.pdf. The presentation includes information on and photographs illustrating a containerized shipment of DDGS from the Adkins Energy ethanol plant to a feed mill in Vietnam.

⁴⁵ Vince McCabe, Illinois River Energy, remarks to a meeting of the Mid-West Truckers Association, October 20, 2006. He continued, "In January 2007, we're going to start processing corn for ethanol. We're going to load the co-product – DDGS – into containers and deliver them to Global III. In the first year of operation, we intend to ship 60 percent of 160,000 tons of DDGS overseas to places like Laos and Cambodia. My goal is to ship all 100 percent by the second year. I could be loading 30 containers a day. I want to pay \$30-50 per ton max for shipping. My freight advantage can produce a savings that will be like putting \$5 to \$25 more money in my pocket for every ton that we ship. The per ton freight rate to Korea is the same as the one I'd use to send it on a super hopper car to livestock operations in California."

busiest container “ports” in the world, trailing only Hong Kong, Singapore, and Shanghai.⁴⁶

As an outgrowth of the Chicago region’s historical role as a hub for rail and road transportation, Northern Illinois is uniquely suited to capitalize on containerized exports of corn, soybeans, and DDGS.

2.4.1 Links in the Freight Chain: Intermodal Connectivity

The freight chain for exporting containerized corn, soybeans, and DDGS encompasses a sequence of storage, material handling, and transportation – from the producer to the end user. It is “intermodal” because trucks, the railroads, and oceangoing vessels all have their parts to play in ensuring that the containerized cargo gets to customers on schedule and in an acceptable condition. Every move and each mode must succeed. It’s all about efficient intermodal connectivity.

The potential for containerization led the U.S. Soybean Export Council (USSEC) to commission a study. The result was an excellent report by Pollock Logistics Consulting, published in August 2006, which included a very detailed description of the “logistics network” for containerized soybean exports.⁴⁷ (The Pollock report also treats the transportation economics underlying the current growth in containerized exports.)

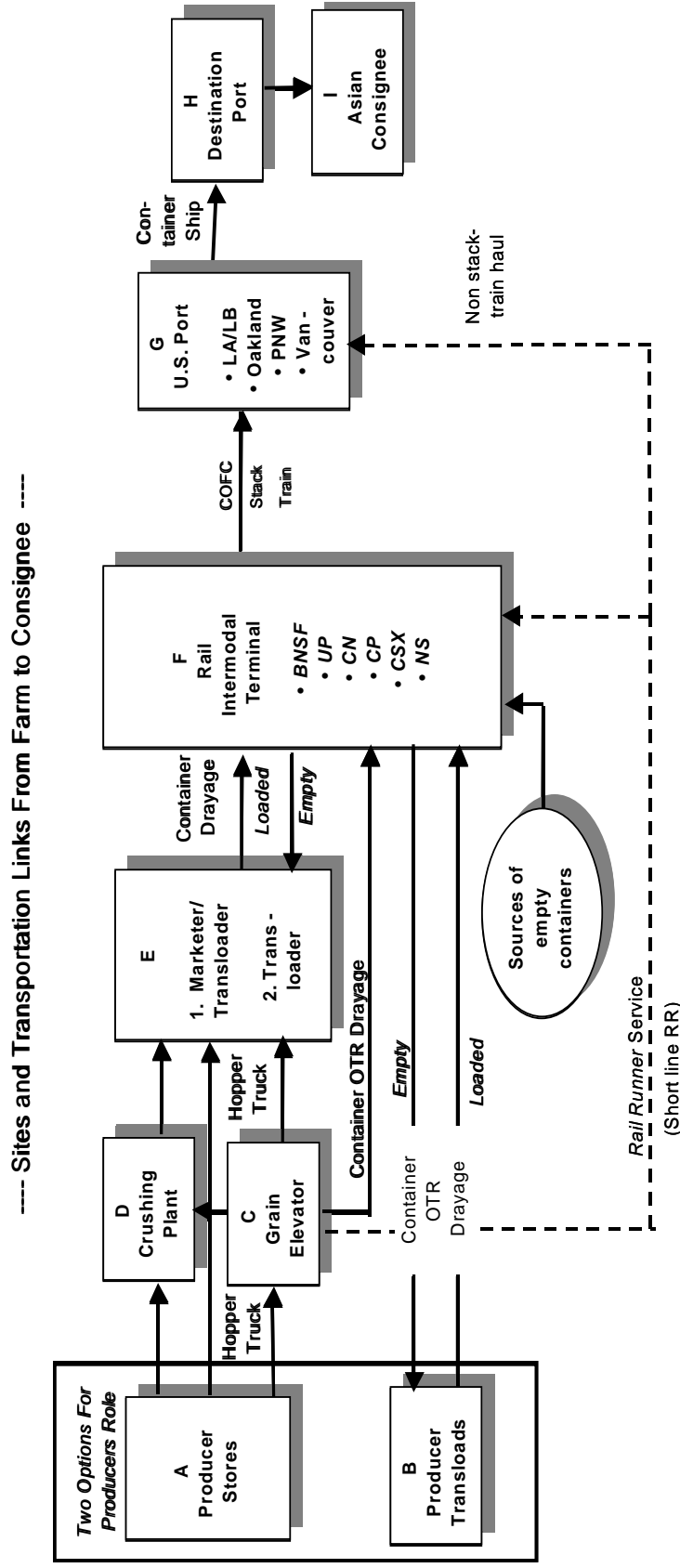
With only a minor variation in the case of DDGS (i.e., the DDGS freight chain effectively begins at the ethanol plant), Pollock’s description of the logistics network is applicable to containerized exports of corn and DDGS as well as soybeans. The present report draws heavily on their work.

The freight-chain elements identified by Pollock Consulting are evident in the flow chart on the following page:

⁴⁶ Comments by Gerald Rawling at the Rochelle Forum, “Capitalizing on Containers: Assessment of an Agricultural Development Opportunity for Northern Illinois,” September 6, 2006.

⁴⁷ *The Network for Containerized Soybean Exports*, Project 6057, Pollock Logistics Consulting, LLC, prepared for the U.S. Soybean Export Council, 2006.

Soybean Container-Export Logistics Network



Source: Pollock Logistics Consulting, LLC, and U.S. Soybean Export Council.

Key Elements

The key elements in the freight chain for containerized exports of corn, soybeans, and DDGS are listed below, approximately in their sequence:

➤ **Producer storage:**

- Corn and soybeans: on-farm storage.
- DDGS: at the ethanol plant.

Conceptually, soybean and corn growers throughout Northern Illinois are potential sources of product for containerized exports. (Indeed, Jim Black, General Manager of Maplehurst Farms, who ships both corn and soybeans in containers, recently reported that containerized product from Southern Illinois was now moving through the Chicago-area intermodal system.⁴⁸ And Minneapolis-based broker John Andrusko has told us that farmers and co-ops from as far away as eastern Minnesota have plans to export containerized product through Global III.⁴⁹)

On-farm storage of some sort is a commonplace. In 2002, some 29,000 Illinois farms collectively possessed a grain storage capacity of over a billion bushels, averaging over 38,000 bushels of capacity.⁵⁰ Reportedly, on-farm storage capacity has expanded significantly since 2002.⁵¹

Ethanol plant economics depend upon the sale of the DDGS co-product. Therefore, on-site DDGS storage (and drying) typically is integrated into the design of the plant.

➤ **Intermediate storage:**

- Grain elevators for corn and soybeans.
- Transloading-facility storage bins for corn, soybeans, and/or DDGS.

Intermediate storage is used when product is not loaded into containers directly from a producer's storage.

➤ **Trucking and container drayage:**

⁴⁸ Interview with Jim Black, Maplehurst Farms, November 20, 2006.

⁴⁹ Interview with John Andrusko, Pro-Export Services, December 15, 2005.

⁵⁰ Table 36, Grain Storage Capacity, 2002 Census of Agriculture, U.S. Department of Agriculture, National Agricultural Statistics Service.

⁵¹ E-mail correspondence with Kevin Rund of the Illinois Farm Bureau, December 4, 2006.

- Trucks move corn and soybeans from the farm to the next event (e.g., elevator transloading facility)
- Trucks move DDGS from ethanol plant to transloading facility.
- Drayage: Trucks move empty containers to transloading point and loaded containers to intermodal facility
- Similar trucking operations occur at the receiving end, after the containers have been off-loaded at the port of import.

➤ **Transloading facility:**

- Facility where the product is transferred from intermediate storage to container.

Typically, a belt conveyor system is used in transloading operations.

The Pollock report lists several Illinois transloading facilities, including⁵²

- Scoular TSC: Joliet (Will County).
- DeLong: Argo (Cook County); Joliet and Shorewood (Will County).
- Prairie Creek: Wilmington (Will County).
- Consolidated Grain & Barge: Rochelle (Ogle County).
- International Feed: Peoria (Peoria County).
- Great Lakes Grain: Chicago (Cook County).

➤ **Rail intermodal terminal:**

- Rail yard for inbound and outbound trains that transport containers. The terminal possesses cranes for loading and unloading containers to and from trucks and railcars as well as large lay-down areas for container staging and storage.

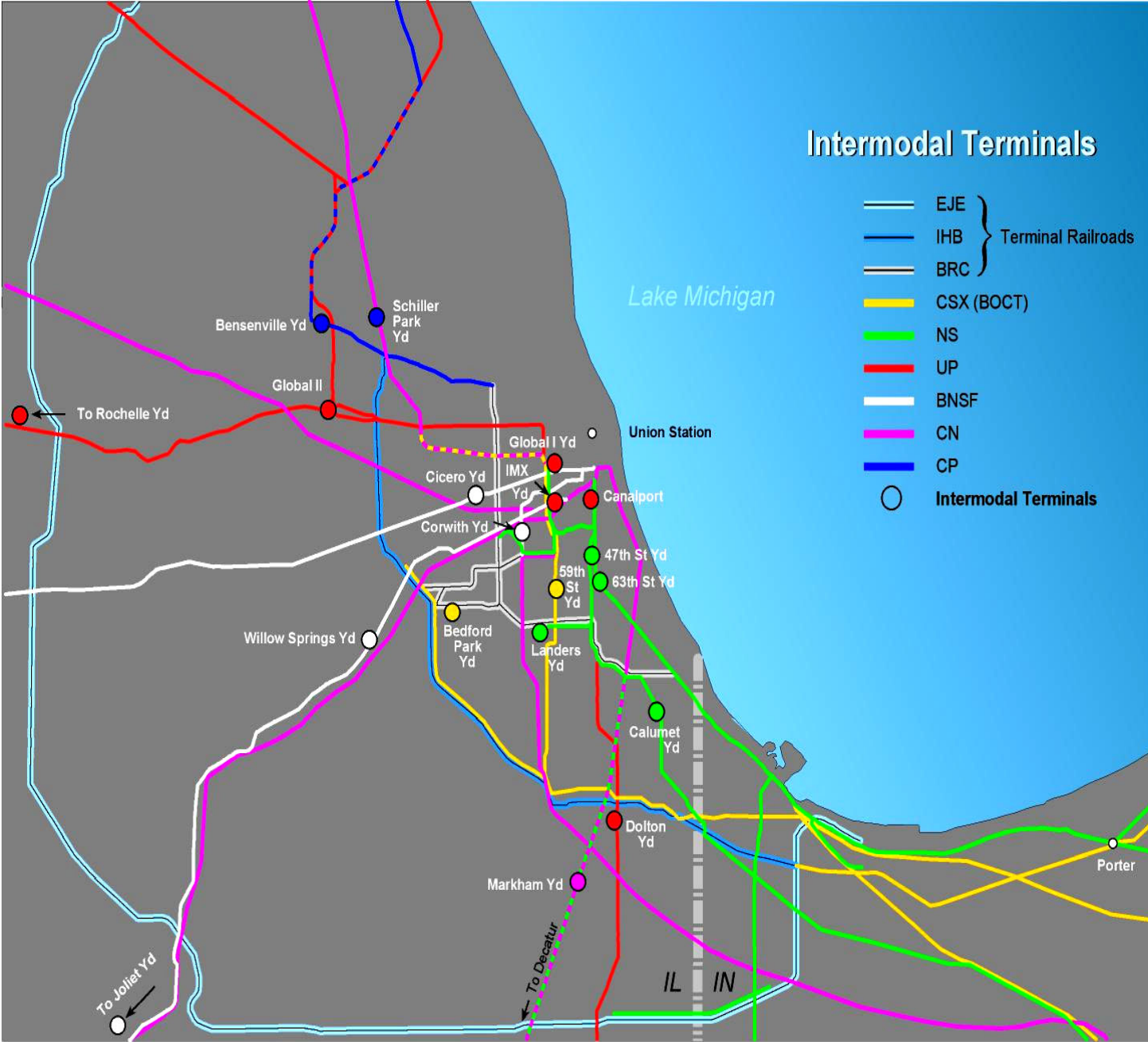
Typically, this is where the shipper retrieves empty containers for transloading.

Chicago-area intermodal terminals, as well as the related rail lines, are shown on the map on the following page. (Unfortunately, the regional freight map has not been updated since the construction of Global III (arrow pointing to “Rochelle” on the map) and LPC (arrow pointing to “Joliet”.)

The Global III terminal in Rochelle, Illinois, completed in 2004, occupies a 1,200-acre site and advertises a capacity of 720,000 “lifts” (containers or trailers on or off railcars) per year. Three loading tracks enable the servicing of up to 25 trains and 3,000 containers or trailers daily. The large, paved staging and storage area eventually will be able to accommodate 7,200 containers (or trailers).

⁵² *The Network for Containerized Soybean Exports.*

Chicago Area Intermodal Terminals



Source: Pollock Logistics Consulting, LLC, and U.S. Soybean Export Council. "To Rochelle Yd" is indicating Global III in Rochelle, while "To Joliet Yd" indicates LPC in Elwood.

The owner of Global III, Union Pacific Railroad, has built a 15-lane entrance gate to facilitate inbound truck traffic.⁵³

BNSF Railway's Logistics Park Chicago (LPC), completed in 2003, operates on 500 acres in Elwood, Illinois, and has marketed itself as "North America's largest international intermodal facility." As of 2005 LPC had three loading tracks with a capacity of 876,000 lifts per year, 3,347 container staging/storage spots, and 7 inbound checkpoint lanes.⁵⁴

These terminals play a large role in containerized exports of Illinois corn, soybeans, and DDGS, and both have plans to increase capacity.

The Pollock report includes a comprehensive list of intermodal terminals in the Midwest, sorted by the railroads to which they are connected.⁵⁵

➤ **Railroad:**

- The loaded containers are transported by rail from the Chicago area to the port of export.

➤ **Container export terminal:**

- This is where the containers are taken off the train, staged, and then loaded onto the oceangoing container vessel. Like the intermodal terminal, the export terminal possesses cranes for loading and unloading railcars and ships as well as large lay down areas for container staging and storage.

➤ **Oceangoing container vessel:**

- The ships that transports the containers from port of export to port of import.

Due to protections granted by law to U.S.-flagged vessels, which render them non-competitive, most ships involved in these trades are foreign owned and flagged.

⁵³ Union Pacific Railroad sources.

⁵⁴ BNSF sources.

⁵⁵ *The Network for Containerized Soybean Exports.*

➤ **Container import terminal:**

- This is the other end of each voyage – a port facility essentially identical in its characteristics to the container export terminal. Here the containers must pass through the importing country’s customs and agricultural inspections before being released to the importer.

2.4.2 Tale of Two Exports: DDGS and Soybeans

To illustrate anecdotally the structure and function of the container freight chain, we offer the following descriptions of two actual exports:

DDGS to China: Cool and Sweet

In October of 2006, the Scoular Company shipped containers loaded with DDGS from Illinois to China.

Scoular, based in Minneapolis, has been exporting agricultural products by container for over 10 years and has been exporting containerized DDGS for 3 years. The company acts as exporter of record for these DDGS shipments and directly manages all aspects of the transportation from the ethanol plant to the end user (i.e., they do not use a third-party freight forwarder). According to Eric Jackson, Senior Vice President of Scoular, this hands-on approach squeezes much of the risk out of a rather complex process and thereby enables them to be successful.

The first link in this freight chain is found at the Illinois ethanol plant, where the DDGS, a co-product of the ethanol process, is produced. The DDGS is stored on site in tanks, where it cools before leaving the plant. With all subsequent transportation events carefully planned and coordinated, Scoular’s hopper-bottom trucks arrive at the ethanol plant and are spout-loaded from the storage tanks. The trucks are weighed at the ethanol plant and then proceed to Scoular’s transloading facility in Channahon, Illinois. Upon arrival at Channahon, the DDGS is transferred to unloading bins.

In the background, Scoular has entered into a freight contract with Maersk Line, the Danish steamship company, onto whose container vessel the DDGS eventually will be loaded. With the contract in place, Maersk releases empty containers to Scoular, whose trucks pick them up at the Burlington Northern intermodal rail facility in Elwood, Illinois, and carry them to the transloading point.

At Channahon, both the DDGS and the containers are inspected. The DDGS must be “cool and sweet.” The product must be cool to avoid product degradation. By “sweet” is meant not sour smelling, which condition can be indicative of prior degradation. The DDGS also is sampled for independent

laboratory testing to confirm compliance with specifications agreed between Scoular and the overseas buyer.

The lab's report is one of the myriad of documents that will allow the product to be loaded onto the container vessel, to gain entry of the DDGS into China, and/or to enable Scoular to be paid under the terms of the buyer's letter of credit. While not part of the freight chain per se, these documents are critical to the successful movement of the DDGS-laden "boxes" from Illinois to the customer in China.

Visual container inspection at Channahon is equally important. The box must be clean (no foreign material), structurally sound (e.g., no welding repairs), waterproof, and airtight. A dirty container risks contamination or deterioration of the DDGS. With respect to structural integrity, a very big, unpleasant, and expensive mess will be created if a box falls apart in handling and loses some or all of its contents. Unsatisfactory containers are rejected out of hand, at which point they become the responsibility of the steamship company. Use of a dirty or weak box is a risk not to be taken.

Container loading at Channahon is accomplished by means of a high-speed conveyor system running from the unload bin to the box. The discharge section of the system is simply placed inside the container, and the DDGS flows off the end of the belt. During loading, the container is "coopered" (a barrier is constructed inside the doors). The barrier prevents spillage out the doors during loading and when the container is opened by the end user. Made of industrial cardboard, steel pipe, and lashing, the barrier is built up while the box is being loaded.

The loading crew takes care not to put too much product into the box, due to a variety of weight restrictions (highways, railroads, steamship lines). For DDGS to China, around 53,000 lbs. are loaded into a 40-foot container.

The box is loaded by means of pulling the conveyor from front to back (that is, ending at the doors). This technique ensures a relatively level and balanced distribution of product within the container. Because DDGS containers are not fully loaded, poor distribution will unbalance the box, risking difficult crane handling at the intermodal facility and container ports and/or potentially endangering the railroad transit from Chicago to the West Coast container port.

Scoular is able to load a 40-foot container in about 10 minutes. All going well, a container can be picked up at the BN intermodal yard in Elwood, driven to the Scoular transloading facility in Channahon, loaded with DDGS, and be back in Elwood in one hour. Shipments like this one, to China, typically involve 40-42 boxes at a time. (The company currently loads and ships upwards of 300 containers of bulk agricultural products each day.)

Upon arrival at the BN intermodal facility in Elwood, the containers are offloaded by crane and placed in a predetermined staging area. Later, following instructions from Maersk, the containers are placed on rail cars on a train whose schedule will enable arrival in Los Angeles in time to meet a specific Maersk container vessel.

When the train reaches the container terminal at the Port of Los Angeles, Maersk takes control of the boxes, lifting them off the BN rail cars, moving and stacking them according to a logistics plan (pre-vessel stacking), and eventually loading them onto the outbound container vessel.

In this case the containerized DDGS is on its way to Dalian, China, a major port in Liaoning Province. After departing from Los Angeles, the vessel typically makes one or more stops before arriving in Dalian (e.g., Oakland and/or Seattle to take on more boxes; Shanghai to offload part of its cargo). The voyage from Los Angeles to Dalian takes around 14 days.

At the Port of Dalian the containers are offloaded and placed on the dock. Then they are shuttled to a holding yard pending inspection by Chinese agricultural inspectors and customs officials. At this point Scoular notifies the consignee (the buyer/end-user) that the containers are available. It takes 5-10 days to “commercialize” the boxes (i.e., complete all requirements to get the containers released from the port).

Scoular’s own in-country agent plays a critical role on the import side of the transaction. Among other responsibilities, the agent assists in agricultural and customs clearances; collects documents required to draw on the customer’s letter of credit and sends them back to the U.S.; arranges inland trucking of the loaded containers to the customer and then the empties back to Maersk; and in general represents the company’s interests in China. Scoular retains such agents in ports throughout the world.

The customer/end-user in this instance is a Chinese manufacturer of animal feed located some 500 kilometers from Dalian. The inland trucking leg, therefore, is of great importance.

Once the containers arrive at the feed company they are emptied by means of a hydraulic lift that tilts the truck. Through a combination of gravity, teasing the product out with long sticks, sweeping, and air blowing, the DDGS is transferred from container to feed mill, thereby ending its long journey.

At the feed mill the product is subjected to another “cool and sweet” inspection and is sampled for laboratory analysis. If there are no significant discrepancies as to what Scoular has contracted to sell to the feed company – and if all of the relevant documents have been obtained – Scoular can present the documents for payment under the letter of credit. If ever there is a discrepancy, notes Eric

Jackson of Scoular, “We need to talk.” Good customer service keeps Scoular’s good customers – and keeps the containerized DDGS moving.

After the DDGS has been discharged at the feed mill, the containers are cleaned by the customer, following which Scoular’s local agent directs them to their next destination (on Maersk’s instructions and at Maersk’s expense). Scoular’s custody of the boxes ends at that point.

After a long journey that began at an ethanol plant in Illinois, the containers are ready for their next cargo – perhaps Chinese-made Christmas lights that will find their way to the living rooms of the same Illinois farmers whose corn, in the form of DDGS, is now feeding the livestock of China.

Non-GMO Soybeans to Asia: Make Room for the Big Guys

Maplehurst Farms is a family-owned firm in Rochelle, Illinois. In addition to working 2,000 acres of farmland, the company manages fertilizer, chemical, feed, and seed businesses as well as grain elevators.

Maplehurst also ships Illinois corn and soybeans overseas in containers. Their containerized non-GMO (not genetically modified) soybean exports began five years ago, while containerized corn shipments were initiated just in 2005. Starting this year, Maplehurst is exporting even GMO beans in containers.

In the past year, the company has shipped some two million bushels of soybeans and 500,000 bushels of corn by container. General Manager Jim Black says he is a bit surprised by this growing segment of Maplehurst’s business: “It is not a ‘here today, gone tomorrow’ opportunity.”

Black described a recent shipment of containerized soybeans to Asia: The company contracted with a Northern Illinois farmer to supply a quantity of non-GMO soybeans, which the farmer delivered to the Maplehurst-owned Percy grain elevator in Clare, Illinois. To protect against contamination, the Percy elevator maintains segregated storage for the non-GMO beans.

Using trucks from their own fleet of 17, Maplehurst picks up empty containers at Union Pacific’s Global III Intermodal Terminal in Rochelle. Maplehurst’s trucks are registered with Global III, which enables speedy entry into the terminal. The empty boxes are carried to the Percy elevator, a mere 11 miles from Global III.

This transaction involves the shipment of 90 “forties” (40-foot container) to Asia. The boxes belong to APL (part of the Singapore-based Neptune Orient Lines). The APL containers eventually will be loaded onto an APL container vessel on the U.S. West Coast.

Prior to transloading, the beans are sampled for moisture and non-GMO classification by an on-site tester. The samples are processed in a laboratory in Kankakee, Illinois, with test results available the next day. In parallel with the testing, the import- and payment-related documentation is generated.

The soybeans are transloaded into the containers at the Percy grain elevator by means of a conveyor system, which runs from a hopper directly into each empty box. Cardboard filler is installed inside the container door to keep the grain from spilling out.

Maplehurst has contracted to sell a specific weight, so the container is weighed after transloading and then adjusted accordingly. To meet export regulations, the scale at Percy is certified under the jurisdiction of the U.S. Department of Agriculture. In this case around 833 bushels of beans are placed in each container.

The soybean-laden boxes are returned to Global III, where they are taken off the trucks and staged. Later they are crane-loaded onto Union Pacific railcars for their trip to the West Coast.

With a team of four trucks, Maplehurst can manage six turns per day – 24 containers of soybeans from the Percy elevator to the Global III Intermodal Terminal.

This is the point at which Maplehurst's containerized shipments of soybeans differ from Scoular's DDGS shipments – which simply illustrates that there is more than one way to get it right. While Scoular acts as exporter of record and directly manages all stages of transportation from the producer to the end user, Maplehurst's hands-on role essentially ends at Global III. The non-GMO beans have been sold to Cargill, and Cargill's freight forwarder moves the boxes by rail from Global III to the West Coast – and sees that they are loaded onto the container vessel, transported to the Asian port, offloaded, commercialized, and delivered to Cargill's customer, the end-user.

Interestingly, Scoular and Maplehurst employ different strategies for the essentially the same reason: risk management. "You need to go through a broker," advises Maplehurst's Jim Black. "When we tried to do it all ourselves, we found it could take up to nine months to get paid. That's not acceptable."

Scoular, a much larger, international firm whose core businesses include ocean freight – not to mention that they retain local agents in overseas ports – mitigates its risks by having its hand on the wheel from end to end.

Maplehurst, on the other hand, effectively a regional company with core competencies that include producing, storing, buying, selling, and locally transporting grain, has concluded that the international aspect of the business is

a headache they can live without – and exporting successfully is not without its unique risks, not the least of which is getting paid. Better for Maplehurst to sell the product to a large, international company like Cargill, which is equipped to manage the risks associated with an export transaction.

Maplehurst Farms is doing what it does best: buying product locally, selling to a U.S. company (thereby avoiding the creation of a cross-border receivable), transloading containers at its own elevator, delivering the loaded boxes on its own trucks to an intermodal terminal just down the road – and then getting ready to do it all over again.

3.0 Creating Value through Containerized Exports

Containerized exports of agricultural products have grown substantially over the past decade, investments in infrastructure have been made to sustain them, and agribusiness companies (and even individual farmers) are developing new markets for them.⁵⁶

While containerized shipments remain a niche in the larger agricultural exports business, by all appearances these exports will continue to grow in the years to come.

Below are some thoughts on how value can be created in Illinois through containerized exports of corn, soybeans, and DDGS.

3.1 Farm Sector

Like all residents of Illinois, our farmers wish to enjoy the fruits of their labor – not to mention benefit from their investments in land, equipment, and other agricultural inputs. Beyond viability, Illinois farmers seek to make a profit sufficient to provide a good life to their families.

If a particular farmer is not a party to an export transaction, and is simply selling product to a third party at the farm or local elevator, they are likely to be indifferent as to which transportation mode is used to get the product to the overseas buyer – unless it is an incremental sale and/or if they are being paid a premium.

Some overseas buyers explicitly require that the U.S. product they import be containerized for reasons of transportation and handling – for example, if their facilities are closer to a container port than to a bulk port; or if they use containers as short-term storage.⁵⁷ This represents a potential for incremental sales.

⁵⁶ Ogle County farmers Jeff Cappel and his father, Don, have been shipping identity-preserved soybeans to the Pacific Rim via container for more than a decade. They have sold product to customers in such places as Japan, Korea, the European Union, and Hawaii. Last year, they invested \$1 million in the expansion of their operation. A half-dozen area farmers now get their IP beans inspected at Cappel Seeds. Jeff Cappel's two sons are now entering the family business. In a December 5, 2006, interview, Cappel said that there were a lot of empty containers in this region "looking for a home."

⁵⁷ Mike Callahan, Senior Director of International Operations for Asia at the U.S. Grains Council, has observed importers using containers for "inventory management," taking advantage of up to 30-days "free storage" before they have to return a box to its owner. Interview, September 29, 2006. See also Vachal, VanWechel, and Reichert, *U.S. Containerized Grain & Oilseed Exports Industry Survey*, p. 12.

There also is widespread evidence – some documented and some anecdotal – that certain products that travel best in containers also command higher prices.⁵⁸ These include organic, non-GMO, and/or IP corn and soybeans.⁵⁹ Buyers' concerns for cross-contamination and/or their desire to trace product back to its source are driving these niche markets.

USDA published a summary of a 2002 South Dakota seminar titled "Diversify Your Wheat Markets: How to Establish Identity-Preserved Channels Using Containers," which offered the opinion that, "At a time when the need for traceability and segregation and specific trait demand are increasing, and the need to add value to the farmer's crop is growing, there is a role to be played by containers in moving grain. The increased interest in IP markets and traceability will determine the extent of its evolution."⁶⁰

Craig Ratajczyk, Director of Global Issues & Alliances at USSEC, has listed some of the advantages available to Asian importers of containerized soybeans:⁶¹

- Containerized shipments allow importers the opportunity to purchase from farmer-owned or farmer-organized shipping entities.
- Containerized shipments of soybeans are reported to be generally higher in quality, because they are handled less. As such the amount of split and broken beans and the levels of foreign material (FM) are lower.
- Containerized shipments provide importers the flexibility to order soybeans or soy meal on a "just-in-time" basis, as opposed to taking positions for large deliveries from bulk vessels.
- In the event there are logistical problems, the demurrage for containers is much lower than that of bulk vessels, thereby minimizing the overall financial risk.

⁵⁸ The U.S. Soybean Export Council provided us with documentation of exports of containerized organic and non-GMO soybeans. Regarding prices, Vachal, VanWechel, and Reichert reported that shippers responding to their survey "indicate an average premium of \$5 per hundredweight for container shipments, relative to the local bulk market price." *U.S. Containerized Grain & Oilseed Exports Industry Survey*, p.12.

⁵⁹ See, for example, Gary E. Pepper, "Niche Market Soybeans – Opportunity for Some Soybean Growers in Illinois," University of Illinois, 1995: <http://www.ag.uiuc.edu/~stratsoy/expert/niche95.html>.

⁶⁰ See http://www.ams.usda.gov/tmd2/SD_Wheat/overview.htm.

⁶¹ C. Ratajczyk, "Targeting Competitive Marketing Channels for Soy," U.S. Soybean Export Council, Inc., 2006: http://www.ussoyexports.org/news/key_issues/container_logistics.pdf. See also *The Network for Containerized Soybean Exports*, Pollock Consulting, p. 9.

As regards DDGS, the more corn-based ethanol that is produced in the U.S., the more corn Illinois farmers will need to grow, other things being equal. New overseas markets are being developed for DDGS, an ethanol co-product, and much of this DDGS is being transported by container. The Illinois corn grower is the coincidental beneficiary of DDGS exports.

“In thirty years in this business, I’ve never seen anything come on as suddenly as DDGS,” says Callahan of the U.S. Grains Council. “Feed grain demand tends to grow gradually. The DDGS export market didn’t exist three years ago and today runs at one hundred thousand tons for pig and poultry feed. It’s widely received and easy to promote. I see a five to eight percent annual growth rate for the next twenty years.”⁶²

In summary, the needs of some overseas buyers – whether due to narrow transportation-and-handling requirements or demand for non-standard products – are driving containerized niche markets that carry with them the potential for both incremental sales and higher incomes for Illinois farmers.

3.2 Transportation and Handling Sector

Obviously, the creation of value in the transport sector is tied to future increases in containerized shipments. Growth over the past decade already is affecting all the links in the container freight chain.

Further growth in containerized exports of corn, soybeans, and DDGS is likely to create value in the Illinois transportation-and-handling sector in the following ways:

- **Producer storage:** New investments may be required both on the farm and at ethanol plants to ensure that storage facilities are “container friendly” (i.e., able to make efficient transfers to outbound hopper trucks or, in some cases, directly into containers).
- **Intermediate storage:** Similarly, the owners of grain elevators may find it advantageous to invest in facility upgrades for loading hopper trucks bound for transloading facilities or perhaps to load containers directly. Pure transloaders will invest in expanded storage capacity, if they can credibly project growing volume.
- **Trucking and container drayage:** Over-the-road container trucking and drayage companies’ investments in additional rolling stock will be driven by demand, a consequence of insufficient capacity in light of growing volume. They are sure to pay attention to the role of freight-rate differentials; any perception that containerization of agricultural products is only a temporary phenomenon will be a brake on capital investment in this sector. Trucking

⁶² Interview with Mike Callahan, U.S. Grains Council, September 29, 2006.

generates many economic multiplier effects (equipment, fuel, service, etc.) and employs thousands in Illinois.

- **Transloading facilities:** If they are optimistic about the future, the owners (and future owners) of transloading facilities will invest in upgrading existing facilities and/or building new ones. New transloading facilities will be capital intensive and will create employment in construction and equipment manufacturing.
- **Rail intermodal terminals:** The newer intermodal terminals like Global III and LPC have expansion plans that depend upon growth in container traffic generally. They certainly should take into account projections of containerized exports of corn, soybeans, and DDGS when considering these incremental investments. As with transloading facilities, such investments will be capital intensive and will create employment in construction and equipment manufacturing.
- **Railroads:** Like all capital-intensive businesses, railroads need to generate revenue with their assets as much of the time as possible. Flatbed railcars that are deadheading, empty, from a Northern Illinois intermodal terminal to the West Coast to fetch boxes loaded with Asian-made consumer goods, could be generating more revenue if these westbound railcars carried loaded containers. So, whether those outbound containers are loaded with DDGS or Goose Island Beer, more is better. The railroads have made large investments in their Northern Illinois intermodal terminals, and, as mentioned above, they will continue to invest if it is merited by market conditions. The railroads have a major presence in Illinois and employ thousands.⁶³
- **Steamship lines:** Whether as a result of overall growth in containerization or displacement (i.e., tonnage that otherwise would ship on bulkers), the owners of oceangoing container vessels are among the most obvious direct beneficiaries of increases in containerized shipments of corn, soybeans, and DDGS. Not only do these firms depend upon container traffic in general to prosper; they also own many of the containers that languish in storage in Northern Illinois or are shipped out of the U.S. empty, when they otherwise could be earning revenue.⁶⁴ While most of these container lines are foreign owned, they have major presences in the U.S. and employ many in this country, including in Illinois.

⁶³ As of 2004 there were 12,760 persons employed by the railroads in Illinois. Association of American Railroads.

⁶⁴ One agricultural shipping broker we interviewed commented that “Everybody knows who’s going to pay for the return of empties – the ocean carriers.” He has seen discounts of as much as 50 percent (e.g., \$1,000 from Chicago to Tokyo versus a cost of \$2,000) as inducements to Chicago-area shippers to put something in the otherwise empty boxes.

Unlike farmers, the actors in the container freight chain cannot be indifferent as to which transportation mode is used to get product to overseas buyers; obviously, they have every interest in expanded exports of containerized product, whether as a result of overall growth or the displacement of oceangoing bulk vessels.

Unless the pie gets larger (i.e., more corn, soy, and DDGS to transport), and if freight-rate differentials remain the primary drivers of transport decisions, the container ship's gain will simply be the bulker's loss – and vice versa over time.

3.3 Exports

Our country's perennial trade deficits are well known and arguably unsustainable in the long term. Much government energy – at both the federal and state levels – is directed toward export promotion (“opening up markets to American goods”), attempting to address this imbalance.

American agriculture – including Illinois corn and soybeans – is on the plus side of the U.S. balance of trade, and no one should object if we play to that strength and export more agricultural products.

In terms of value creation, we return to two key conditions: either containerization will enable Illinois farmers to grow and export more product; and/or it will enable Illinois farmers to get better prices for what they export. In either condition, the value of U.S. exports will increase, and the effect on the balance of trade will be positive.

3.4 Is It a Zero Sum Game?

When it comes to corn, soybeans, and even DDGS, some may view the transportation options as a zero-sum game. What has been gained, for example, when containers in the intermodal system simply displace the traditional river barges, hopper cars, and oceangoing bulk carriers?⁶⁵ This happens. It is apparent that some quantity of corn, soybeans, and DDGS has been exported by container because of – and only because of – periodically advantageous freight-rate differentials: small-tonnage containerized product by rail to West Coast ports versus large-tonnage bulk product on Mississippi River barges for transfer to bulkers in New Orleans, for example.

It can be argued, credibly, that the container option – an increasingly reliable mode – increases competition, putting downward pressure on freight rates generally. This in and of itself has the potential to leave a little more of the price paid by the overseas buyer in the pocket of the Illinois farmer.

⁶⁵ Jerry Knapper of Inland Barge Company says the “astonishing” growth of this shipping option is leading his company to consider expanding its limited involvement in containerization. Knapper spoke at the University of Illinois-Chicago logistics summit on November 21, 2006.

It also is possible that the U.S. will capture a larger share of the world grain export market through the use of containers. No other major world grain exporter has the numbers of empty containers, the capacity to load them, and the infrastructure necessary to move them from where grain is produced to container ports. As importers increasingly recognize the value of container shipments, the U.S. in general and Northern Illinois in particular are uniquely positioned to take grain export volume away from other exporting countries.

This competition also pushes the actors in both freight and export chains – the intermodal/container chain and the traditional barge/bulker chain – to become more innovative and efficient. These actors include the owners of grain elevators, transloaders of both containers and barges, shippers, freight forwarders, truckers, the laboratories testing product samples, intermodal terminal operators, the railways, the coastal container terminals, the barge companies, the steamship lines, the banks issuing letters of credit, equipment manufacturers (of container cranes, for example, or marine diesel engines) – not to mention the government agencies responsible for maintaining adequate highways, bridges, and inland waterways; permitting privately owned infrastructure developments; conducting product inspections; issuing export-related documents; and helping to find markets for Illinois farm-sector exports.

Other concerns for the zero-sum game revolve around DDGS in particular. Is this product simply displacing corn, soybeans, and other products as inputs for animal feed?⁶⁶ That preoccupation notwithstanding, the DDGS option also has the potential to spur competitors to find new markets, innovate, and become more efficient.

Zero sum game? Not if there is export growth generally – and not if competition creates widespread benefits to Illinois farmers over the long term.

⁶⁶ See, for example, “Not a Biodiesel Headline: DDGs Growing Impact on Soybean Meal Markets,” Illinois Soybean Association, June 13, 2005: <http://www.ilsoy.org/soy-news/article/?id=50>.

4.0 Improving the System

The containerized agricultural export business encompasses a variety of interested parties: farmers, large exporters, truckers, the railroads, and SSLs to name a few.

Operating on tight margins, the farm sector seeks to extract value from this new logistics pattern. They struggle with the timing of shipments, the relationships, and even access to containers.

At the Rochelle Forum last September, many of these stakeholders expressed concerns – and offered constructive suggestions – about the present adequacy and efficiency of “the system.” This section reflects and expands upon the comments of stakeholders at the Rochelle Forum. Special emphasis has been placed on export activity involving Global III in Rochelle and LPC in Elwood.

4.1 Freight Planning

Freight planning is so vital to the successful development of the containerized agricultural export business that a bit of history is in order.

With BN’s LPC so much busier than UP’s Global III, City of Rochelle officials intend to learn from the experiences of Elwood by making infrastructure improvements before traffic becomes a problem. Rochelle has a track record for capitalizing on its freight advantage; the community had researched the intermodal transportation industry and sought a railroad to build an intermodal terminal before UP expressed any interest.⁶⁷

While the city of Rochelle has been proactive, Will County has been reactive. Neither local officials nor economic-development agencies had expertise in freight in the late 1990s, when the U.S. Army was developing plans to transfer ownership of its Joliet Arsenal munitions plant.⁶⁸ CenterPoint Properties

⁶⁷ E-mail correspondence from Ken Wise, Rochelle’s retired economic development director, November 29, 2006. Wise explains: In 1998, “Rochelle had sought and received federal and state funds to commission a feasibility study looking at Rochelle building an intermodal terminal that would have access to the Burlington Northern Santa Fe, Union Pacific and Illinois Railnet. The study asked the Burlington Northern Santa Fe and Union Pacific about their interest in a Rochelle location. Both said Rochelle was too far out from Chicago and would not use it. In fact the Union Pacific told Rochelle the community was 10 years ahead of its time even looking at a facility. [Shortly thereafter] the Union Pacific approached Rochelle about doing a project in Rochelle because they had been run out of all locations east of Rochelle. Since Rochelle had years to research and get used to the intermodal concept, the community was willing to facilitate a site and to make it happen as long as the project met all of Rochelle’s specifications.”

⁶⁸ The *Daily Southtown* reported on the questionable land deals of the Joliet Arsenal Development Authority – a state-created body of nine local officials charged with redeveloping a 3,000-acre parcel for industrial use. “Public Lands Private Agendas,” a series of articles published between October 28 and November 1, 1998.

approached Will County and the village of Elwood with its plan for an intermodal facility. Fast forward, and BNSF's operation of the LPC intermodal facility in western Will County has triggered a growth boom that caught planners and economic-development organizations by surprise⁶⁹. For too long, Will County treated freight and logistics as an afterthought. The situation is comparable to a card player arriving late to the game, picking up his hand, and finding that "he has three queens."⁷⁰

State government's inattention to freight analysis and planning has contributed to western Will County's mounting congestion problem. A successful freight sector creates jobs; but it also results in "large numbers of truck trips (i.e., the distribution component of logistics and distribution) – the cause and effect relationship [of which] is altogether understated."⁷¹

Clearly there is ample room for regional planning – not to mention coordination and communication among levels of government – in order to facilitate rational growth in containerized agricultural exports.

4.2 Road Infrastructure

Because of the key role of trucking in the containerized agricultural export business, much attention needs to be paid to the general condition and weight-bearing capacity of regional roads, overpasses, interchanges, and bridges. This is particularly critical in rural areas, where the product originates and where the weight of a large truck carrying a container load of corn, soybeans, or DDGS can exceed current limitations.

In the vicinity of Elwood, the State of Illinois and Will County are improving the section of Manhattan-Arsenal Road linking I-55 to Baseline Road, which is the main entrance to LPC. There is a full interchange at I-55 and Arsenal Road, but its capacity is constrained immediately south of a bridge over the Des Plaines River. The project to move the interchange further south is expected to take 10 years.⁷² Area trucking businesses are anxious for the project to be completed.

Truckers access the nearby Scouler transloading facility from I-55 via a dangerously narrow frontage road, which also serves several industrial and

⁶⁹ In an August 17, 2006, interview, John Grueling conceded that freight and logistics barely figured in his job description when, five years earlier, he had moved to the Chicago area to become president and CEO of the Will County Center for Economic Development.

⁷⁰ Interview with Gerald Rawling, Director of Operations Analysis, Chicago Area Transportation Study, November 15, 2006.

⁷¹ ["Intermodal Volumes III: Serial Measuring, Tracking & Anticipating Levels of Activity for Northeast Illinois."](#)

⁷² Interview with Mark Schneidewind of the Will County Farm Bureau, December 6, 2006.

intermodal businesses. Near the I-55 interchange off Bluff Road, truckers take a frontage road to the DeLong facility. There are no signals at the intersection, and the frontage road is narrow, with old, pothole-ridden pavement.⁷³

During an August 2006 visit to Elwood, Rochelle city officials concluded that their counterparts in Will County had failed to plan adequately for road infrastructure and traffic-pattern improvements to serve the container yards, transloading facilities, and other businesses near the BNSF ramp. As a result, townships, municipalities, and Lee and Ogle counties are putting together a comprehensive transportation plan that will address the truck and road/rail issues that Elwood did not plan for, or at least has not yet built. The plan will look at road upgrades, overpass construction, and another interchange for I-88.

A big concern for Rochelle is construction of the Jack Dame Road bypass, a mile-long, north-south thoroughfare on the west side of town that will enable trucks to access Global III without entering the heart of the city.⁷⁴

Implementation of the plan already has begun, including the recent blacktopping of Caron Road; the former dirt thoroughfare can now hold 88,000-pound trucks.⁷⁵

One example of a company that has taken advantage of Global III is Consolidated Grain and Barge. From its rural Ogle County location, CGB has been loading approximately 800 containers of corn and soybeans a week for several years.⁷⁶ The grain-loading company needed an upgraded road to get to the state highway and worked out a financing arrangement with Ogle County for road improvements.

4.3 Truck Overweight Permitting

Being able to move heavier shipments saves a lot on the cost of trucking corn, soybeans, and DDGS to transloading facilities.⁷⁷ But already the traffic in agriculture-related containers is running ahead of the investments needed to upgrade the road infrastructure. At present, overweight permitting – while clearly not a good long-term solution – often is required for product to get shipped at all.

⁷³ Our team made this observation during a site visit August 21, 2006.

⁷⁴ E-mail correspondence with City of Rochelle's retired economic development director Ken Wise, November 30, 2006.

⁷⁵ News report on WREX-TV, Rockford, September 15, 2006.

⁷⁶ Interview with a Consolidated Grain and Barge source, October 20, 2006.

⁷⁷ Interview with Bo DeLong, President, the DeLong Co., August 4, 2006.

According to Matt Hart, associate director of the Mid-West Truckers Association, Illinois is the only Midwest state without uniform 80,000-pound access for all roads.⁷⁸ Many jurisdictions use a decades-old standard of 73,280 pounds. Those carrying overweight loads encounter a maze of jurisdictions, complicated even further for containerized grain hauls that exceed the 80,000-pound limit of state-designated roads.

Illinois is the only Midwest state that allows internationally-shipped containerized agricultural products to seek overweight permits on state-designated roads – the result of efforts by Archer Daniels Midland to get Illinois standards in line with those of some other countries. After consulting with the Federal Highway Administration, IDOT agreed to the change in 2005. All of the permits obtained thus far by agricultural shippers have involved loads ranging from 88,000 lbs. to 92,000 pounds. Containerized agricultural products are “the fastest-growing segment” of the state’s overweight permits.⁷⁹

Meanwhile, the Village of Elwood reports a “considerable increase” in the number of local overweight permits issued to truckers hauling grain.⁸⁰ Will County initially adopted IDOT’s new policy – a \$1,000-per-year-per-truck license to carry an unlimited number of overweight containerized loads – until recently creating its own arrangement: a \$20, one day, one truck, one-container overweight permit.⁸¹

Complaints from the agricultural-container haulers have led Will County officials to convene a meeting as this report is being completed. The county is threatening to rescind its permit program unless the haulers are willing to pay fees amounting to two-to-three cents per bushel, says Mark Schneidewind, Will County Farm Bureau manager. Schneidewind added that the county government must recognize that the freight industry needs additional east-west truck routes to LPC.

Wisconsin’s DOT allows overweight permits for grain but not for feed products like DDGS and corn gluten meal (CGM). This restriction increases costs and limits exportable supply in that state.

Agricultural shippers want the overweight-permitting process to be simplified. Most counties offer waivers (or increases) to weight restrictions for agricultural

⁷⁸ In a December 5, 2006, interview, Hart said that trucking supports legislation for uniform truck weights but says that Illinois Senate Bill 218 has not won approval due to fears of townships, municipalities, and counties that heavy trucks will tear up their roads.

⁷⁹ Interview with IDOT permit unit chief Steven Todd, December 5, 2006.

⁸⁰ E-mail correspondence with Elwood village administrator Aimee Ingalls, December 1, 2006. For the 2006 calendar year, Elwood had already issued 136 overweight permits.

⁸¹ Interview with Patty Killinger, an engineer in the Will County Highway Department, December 6, 2006.

products, but there is little if any coordination between counties and state departments of transportation. In some instances, the rules for grains, oilseeds, co-products, and by-products differ. This puts an added regulatory and cost burden on transloaders and shippers of containerized agricultural products.

Illinois River Energy, which will begin producing ethanol in December 2006, plans to ship DDGS overseas via UP's Global III intermodal terminal, a mere four miles away. Chief Operating Officer Vince McCabe says, "I can't get my product to Southeast Asia if I'm having trouble getting my trucks in and out of Global III."⁸²

The September Rochelle Forum generated discussion about Kansas City creating overweight trucking zones within a prescribed range of a rail intermodal terminal. State representative Bob Pritchard (R-Sycamore), who was unable to attend the forum, nevertheless heard about the discussion and tracked down forum participants with the aim of learning more about how to create trucking zones in the vicinity of intermodal terminals.⁸³

4.4 Transloading Facilities

New investment is needed in transloading facilities, if only to squeeze out some costly inefficiencies (e.g., trucks waiting to be loaded or unloaded; and, not unrelated, how long it takes to transload into each box). Companies' views on the market will be a key factor influencing future investment.

Most transloaders are supplied from area grain elevators (or ethanol plants, in the case of DDGS). The elevators track all the market outlets and arrange to deliver their customers' grain to whichever channel makes the most sense. Recently, containerized shipments have been providing higher prices for some products.

Northern Illinois' network of grain-handling businesses – both privately owned elevators and farmer-owned cooperatives – provides transloaders with the lion's share of their exported product. Nevertheless, many larger elevators now deliver loaded containers directly to the rail intermodal ramps (grain elevators can obtain the capability to load containers by investing as little as \$7,000 on an augur for direct loading from hopper-bottom truck to container), while some farmers ship grain in hopper trucks directly to transloaders.

Four years ago, the Kane County-based Elburn Cooperative (owned by 600 area farmers) began occasional deliveries of grain some 30 miles to the DeLong and Scouler transloading facilities. Last summer the Elburn co-op created its own

⁸² McCabe made his remarks during the discussion that followed a consulting-team presentation to the Mid-West Truckers Association dinner at Monroe City's Sunrise Restaurant on October 20, 2006.

⁸³ Rochelle Forum moderator Lee Prunty related this story to the consulting team on September 8, 2006.

container-loading capability. “It’s hard to ignore a market that’s netting ten or more cents per bushel above the other markets,” Phil Farrell explained. “But we have to manage logistics to capture the value – and not suffer additional costs.”⁸⁴

A half-dozen Will County farmers occasionally sell grain at the DeLong or Scoular transload points to take advantage of a price premium of as little as three-to-four cents per bushel. And yet, the “inefficient loading process” is a significant disincentive.⁸⁵ Such delays have led some grain elevators to not use the container export outlet.⁸⁶

A big unknown when elevators make their bids is how long their trucks will have to wait at the container transloading point; inbound hopper trucks can take anywhere from forty minutes to three hours to be unloaded.

DeLong recently moved its Channahon transloading facility for the third time in four years, from a 3.5-acre site to a nearby 10-acre property.

Meanwhile, Scoular has been conducting its transload operations inside a converted packinghouse for several years. With a one-lane entrance and one scale, single-file lines of trucks unload grain for subsequent transfer into containers.

Phil Farrell of the Elburn Cooperative recently commented that, “As container-loading facilities have been set up, nobody has made enough of a commitment to the market to put in an efficient system. I expect a multinational company like Cargill or ADM to address this market at some point.”⁸⁷

Perhaps illustrating Farrell’s point – and given market uncertainty – area transload operators reportedly are not entering into long-term leases on their rented premises.⁸⁸ That said, most local grain handlers believe that the containerization business is building strength and is here to stay.

Industry sources now believe that some multinational company with a large overseas customer base will make the investment to build a more efficient transloading station in Northern Illinois – if they remain confident that the volume of containerization will continue to grow.

⁸⁴ Interview with Phil Farrell, Elburn Cooperative grain merchandiser, August 30, 2006.

⁸⁵ Interview with Mark Schneidewind, Will County Farm Bureau manager, August 17, 2006.

⁸⁶ Interview with Chris Knobloch of Orr Grain, August 4, 2006.

⁸⁷ Interview with Phil Farrell.

⁸⁸ Interview with John Bosca, Will County industrial real estate broker, September 13, 2006.

Could the economics work for a locally owned facility? One informed source estimates that it would take a one-million-dollar investment to develop two centralized transloading facilities capable of handling multiple commodities. Their systems would have to be easily cleanable in order to switch from product to product, with good dust control and ample space for truck traffic.⁸⁹

4.5 Grading and Inspection

Grading and inspection of containers by the USDA's Federal Grain Inspection Service (FGIS) adds several layers of cost and complexity not associated with grain exported via barges or railcars. Since a container is considered a self-contained unit, each requires three important documents for shipment and payment: independent weight, inspection, and phytosanitary certificates.

In general, transloading facilities have invested in platform scales enabling outbound containers to be weighed before drayage to intermodal terminals. This prevents overloading of containers, eliminating the possibility that containers will be rejected by rail carriers for weight restrictions or that drayage companies will be fined for overweight vehicles on public roadways.

Since there is no blending of products once the container is loaded, it is imperative that the grade at the transloading facility meets the contract specification. This requires transloading facilities to have FGIS inspectors on site to provide grades as soon as the container is fully loaded, avoiding the risk of moving grain and oilseeds that are "out of spec" to container yards – or worse, having them loaded onto railcars to export destinations. In instances where inspectors are not on site, official FGIS grades can take up to five (5) days.

Buyers at the export destinations are making payment based on FGIS-certified grades. In most instances, official grades are returned within 24-48 hours, making it possible for transloaders to get documentation before their boxes are loaded onto an oceangoing container vessel. Still, the process adds a level of risk and cost not required by shippers using barges or rail cars only. A change in the inspection system to allow "batched" or "composite" inspections of some number of containers would reduce both the cost and risk to shippers without reducing the quality to export buyers.

The phytosanitary certificate required by the importing country is another cost and a potential barrier to the efficient use of containers. Owing to the size of a container relation to the cargo holds of bulkers, the number of boxes required to satisfy an export commitment greatly exceeds that of other conveyances. Even a smallish shipment of 5,000 MT requires that approximately 225 containers be loaded. Each container requires a phytosanitary certificate from the USDA's Animal and Plant Health Inspection Service (APHIS). Besides the \$50 cost for

⁸⁹ From remarks of Vince McCabe of Illinois River Energy at a Mid-West Truckers Association dinner, October 20, 2006.

each certificate, there is only one export certification specialist covering the states of Illinois, Wisconsin, and Minnesota.⁹⁰ As mentioned in section 2.4, the poor execution of phytosanitary documentation puts continued growth in container exports at risk.

At a minimum, more certification specialists are needed to improve efficiency and reduce the risk to shippers.

4.6 Access to Empty Containers

Container availability complicates the business of moving export corn, soybeans, and DDGS to the intermodal terminals.⁹¹

On the one hand, there are more loaded containers arriving in Northern Illinois from Asia than there is cargo to put into them for a profitable return trip. Indeed, the fact of languishing empties and deadheaded boxes has been an impetus to the containerized agricultural export business.

On the other hand, there appear to be instances when exporters can't get the boxes they need, when they need them. As with all logistics, timing is everything.

The rail carriers provide on-site container storage but charge a premium rate for it. Numerous smaller operators who specialize in storage-only facilities charge a cheaper storage rate to capture this segment of the market. As the containerized grain market has grown, some SSLs have been staging empties at container yards for subsequent drayage to transloading facilities or grain elevators; some boxes also are staged at grain-handling facilities.

While the availability of empties in part drives the growth of this new export market, SSLs in the vicinity of LPC in Elwood ramp struggle to find outdoor locations to stage and store their empties. With LPC projecting 2,000,000 lifts per year, industry sources estimate that some 415 acres will be needed for container storage.⁹²

Will County communities seem not to be interested in developments that will generate significant truck traffic but minimal tax revenue and employment. And

⁹⁰ U.S. Department of Agriculture, APHIS website: <http://www.aphis.usda.gov/subjects/exporting/>

⁹¹ During an August 21, 2006, site visit, Scoular's Renee Powell gave an example of unpredictable supply: The previous Friday, she had called the Wal-Mart distribution center looking for boxes. They didn't have a single empty. On Monday, Wal-Mart called her to say they had 200 containers that they wanted to get out of there. Powell says, "We could load a lot more if the containers were accessible."

⁹² E-mail correspondence with Steve Lazzara, Senior Planner, Will County Land Use Department, December 4, 2006.

they fear that “staging” facilities will become dumping grounds for skyscrapers of rusting cargo boxes.

Will County is looking for locations to store containers and is engaged in some planning to enable new staging-and-storage yards. Responding to inquiries from the SSLs, the Will County Center for Economic Development (WCCED) has sought to intervene with local governments. One consideration is to require shippers to pay a per-container “head tax” to help offset the cost of local burdens.

In addition, the WCCED is working with the Will County Planning Department to devise a model ordinance to regulate container storage facilities. Aiming to minimize “the noise, dust, traffic congestion, and aesthetic blight and other adverse environmental impacts,” the ordinance includes such provisions as a minimum lot size of 20 acres; a minimum setback of 100 feet from any property zoned residential or used for residential purposes; and a maximum stacking height of three containers. There also is a stipulation prohibiting the conversion of containers into dwelling units.

The peak season for inbound boxes is tied to Christmas freight, which drops off by late October. An SSL with containers languishing in Northern Illinois is always trying to find export loads, “but if it can’t they’ll go back empty, because we have no place to keep them.”⁹³

Increasing numbers of containers in storage in the region are forcing some SSLs to look outside the intermodal terminals for staging-and-storage space. Local zoning restrictions, permits, and surface-transportation conditions are hampering this effort. There needs to be planning at a regional level to address these issues.

Interestingly, Rochelle has the opposite problem – a container shortage. Various sources estimate that BNSF is operating LPC at full capacity, while Global III is at less than 20-percent capacity.⁹⁴ UP has a surplus of containers at its Global II facility in western Cook County but apparently has no incentive to assemble shuttle trains that could transport the empties to Rochelle. City of Rochelle officials have proposed to some SSLs that they unload containers at Global III rather than at the rail carrier’s more congested urban facilities.

⁹³ Interview with Jerry Sroja, Maersk Midwest equipment manager, November 30, 2006.

⁹⁴ Bob Sullivan, Union Pacific’s senior manager of intermodal operations at Global III, in “Transit hub Slow to Grow,” *Rockford Register Star*, March 12, 2006.

5.0 Conclusions and Recommendations

Our conclusions and recommendations are rooted in the ideas brought forth at the Rochelle Forum; they have been enhanced by subsequent research and interviews with persons directly or indirectly involved in containerized exports of agricultural products.

5.1 Outlook for the Future

Containerized exports of corn, soybeans, and DDGS are likely to remain a niche business, smallish in comparison to the much larger tonnages that will continue to pass through the traditional, barge-to-bulker export channel. Nevertheless, containerization has grown in recent years; infrastructure continues to be built to support it; farmers, agribusinesses, and industry associations are promoting it to overseas customers; and the State of Illinois and many local governments are looking for ways to facilitate it.

All indicators suggest that foreign demand for containerized corn, soybeans, DDGS, and other bulk agricultural commodities from Illinois will continue to grow. We also are confident that the broader farm sector in the state – including farmers, agribusinesses, industry associations, and government – has both the capacity and the entrepreneurial smarts to meet that demand.

As stated elsewhere in this report, Northern Illinois is where agriculture meets the intermodal network. Outside California, perhaps, it is hard to imagine a part of the country where there is greater potential for growth in containerized exports of agricultural products.

5.2 Public Sector Recommendations

We offer recommendations to the public sector in four areas: strategic planning, infrastructure, regulation, and export development.

Strategic Planning

Farm-sector interest in a new transport option comes at the same time that Chicago-area business organizations are pressing the Illinois Department of Transportation to take a leadership role in creating policies and programs to facilitate the flow of freight traffic statewide, especially in the Chicago region. Chicago's needs are driving development of a statewide freight agenda; agriculture's involvement can help make it happen.

The appropriate role for government begins with convening stakeholders for multi-modal planning efforts that take into account private-sector needs, the interaction of transportation modes, and public interest in new infrastructure

investment. From such discussions will emerge the research and analysis needed to create effective policy.

“Railroads practically created the city in its early days,” wrote Greg Burns in the *Chicago Tribune*, “and [Chicago] remains the point where East meets West and all six major freight lines come together.”⁹⁵ Nevertheless, decades of government inattention have taken their toll, contributing to the current “state of peril” in the region’s freight system, which “threatens the efficiency of the global supply chain.”⁹⁶

Forward-thinking economic-development policies will enhance the farm sector’s ability to capitalize on its proximity to the key rail intermodal terminals in Rochelle and Elwood. The entrepreneurial opportunity occurs at the policy intersection, where agricultural production and transportation assets converge. Hence, the private sector can take full advantage with the collaborative assistance of three state agencies: the Illinois Departments of Commerce and Economic Opportunity, Agriculture, and Transportation:

- The heads of IDCEO, IDOA, and IDOT should join agricultural organizations, economic-development agencies, and other interested parties in a forum to discuss this report’s findings as well as next steps for building on this agricultural development opportunity.
- The leadership of these three state agencies should direct appropriate personnel to work collaboratively on efforts that foster entrepreneurial synergies between freight assets and the development of new agricultural markets.
- The multi-agency approach should be applied to maximize private-sector participation in the Intermodal Advisory Task Force of the Chicago Metropolitan Agency for Planning (CMAP). The most consistently visible state-funded multimodal freight-planning effort since 1994, the Task Force previously operated through CATS, one of two planning agencies that are being merged into CMAP. The amalgamation is intended to concentrate regional transportation, land use, and economic-development planning functions in one organization. The farm sector needs to be at the table.

⁹⁵ Greg Burns, “Railroads on Track to Revival,” *Chicago Tribune*, March 27, 2006.

⁹⁶ From the brochure for the conference “Making the Chicago Region More Competitive in the Global Supply Chain,” sponsored by the Chicagoland Chamber of Commerce, Metropolis 2020, the University of Illinois-Chicago, and the World Business Chicago on November 21, 2006.

Infrastructure

In addition to their key role in planning, the State of Illinois and local governments have the ability to direct spending toward infrastructure improvements that will have many beneficiaries, for example:

- Improving the general condition and weight-bearing capacity of roads, overpasses, interchanges, and bridges in rural areas proximate to intermodal terminals like Global III and LPC.
- Providing incentives to spur the private development of transloading facilities and other infrastructure elements needed to improve the efficiency of the container freight chain.
- Providing incentives to enable the development of new container staging-and-storage yards.
- Ensuring that any related economic-development policies take into account that farmland is the key asset in the production of much-needed renewable resources. Traditional job-creation criteria need to be reevaluated and new incentives created, which enable agriculture-oriented businesses to capture farmland's potential for delivering long-term revenue streams.

Regulation

Regulation falls to government, and stakeholders have reminded us of how regulation can affect the efficiency of containerized exports. Following are some recommendations in this area:

- FGIS should move toward a grade certification system that allows “batched” or “composite” inspections of multiple containers.
- Similarly, APHIS should move toward a phytosanitary certification system that allows “batched” or “composite” inspections of multiple containers – and in the meantime increase the number of export certification specialists.
- Governments at all levels should update, rationalize, and coordinate their overlapping rules and procedures for truck overweight permitting. Through sub-regional planning efforts, county, municipal and township governments can develop a consensus for a uniform overweight-truck permitting process, and then work with state government for a standardized statewide permitting process.

- County and local governments should update and rationalize ordinances that regulate container staging-and-storage facilities, in order to reach a balance between the needs of industry and local quality-of-life concerns.

Export Development

The identification and cultivation of overseas buyers is at the heart of export development. Much good export development work has been done over the past decade by farmers, agribusiness companies, and related industry associations. We have provided but a few examples in this report, including

- Market development by Scoular, Maplehurst Farms, and, by extension, Cargill.
- The efforts of the U.S. Grains Council to promote the use of DDGS in the production of animal feed.

These and similar initiatives by others in the private sector must be applauded and encouraged.

Going forward, the role for government in export development is limited but not unimportant. Two government activities in particular were highlighted at the Rochelle forum: market identification and export education.

Market Identification

Federal and state government agencies traditionally have assisted in export development by channeling inquiries from potential overseas buyers and otherwise promoting (and financing) U.S. exports. Among these activities are a few that should be encouraged specifically in connection with containerized exports of corn, soybeans, and DDGS:

- In-country identification of overseas importers who, whatever their reasons, would prefer to receive product in containers.
- Trade missions for U.S. producers and shippers to countries that appear to have good potential for containerized exports.
- Reverse trade missions (i.e., overseas buyers coming to the U.S.) from countries that appear to have good potential for containerized exports.
- Providing opportunities at U.S.- and Illinois-sponsored trade shows and other promotional events for companies working in the containerization niche market.

- Channeling inquires from overseas to the appropriate producers and shippers in the U.S.

Following are some of the government entities equipped to help develop markets for containerized exports of corn, soybeans, and DDGS:

- The overseas offices of the Illinois Department of Agriculture and Illinois Department of Commerce and Economic Opportunity.
- The overseas offices of the Foreign Agricultural Service of the U.S. Department of Agriculture.
- U.S. Department of Commerce offices in overseas embassies and consulates.
- U.S. Export Assistance Centers in Illinois.

The top executives in these agencies have the opportunity, through leadership and communication, to ensure that their personnel are up to speed on the growth in containerization and how this knowledge can be integrated into their plans for export development.

Export Education

Exporting successfully requires a base of knowledge, some of which can be learned in the classroom, much of which is acquired on the job: international contracts, export documentation, foreign exchange, letters of credit, shipping terms, inland and ocean freight, customs clearance, even cross-border collections.

For the larger firms in the containerization niche – the Scoulers and the Cargills, for example – their excellent knowledge of exporting is part of their stock in trade.

Many smaller firms (like Maplehurst) and even many individual farmers have been and will continue to be tempted to become exporters themselves (i.e., actual parties to the export transaction and responsible for all aspects). This is not to be discouraged. Nevertheless, export education for smaller firms and individual farmers offers good “reality therapy”: it can serve to prepare the new exporter to be successful; or it can lead the student to the realization that making new sales to a third party here in the U.S. is good enough (e.g., the ethanol plant sells its DDGS to Scoular, and Scoular takes it from there).

There are ample opportunities for export education, particularly in Northern Illinois, where universities, community colleges, the U.S. Department of Commerce, the Illinois Department of Commerce and Economic Opportunity, and organizations like the International Trade Association of Greater Chicago

regularly offer courses, seminars, and topical presentations related to international trade generally and exporting in particular. And USDA offers excellent on-line resources.⁹⁷

Government's role in exporter education includes (1) to keep doing what it is doing by offering export-education opportunities and publicizing those offered by others; and (2) to include the farm sector – down to the level of the individual farmer – as part of the target audience for export education.

5.3 Private Sector Recommendations

On the Farm

While containerization may seem to have much more to do with activity off the farm than on the farm, we do have some recommendations for Illinois farmers:

- Farmers should inform themselves about containerization, how it might affect (improve) their business prospects, which products are finding markets through the containerization channel, and what investments they might make to become “container friendly” (e.g., on-farm container-loading capability⁹⁸).
- Farmers also should inform themselves about exporting. While we do not recommend that every family farm become an exporter – it's not without substantial risk – we do believe that the broader the understanding of exporting throughout the farm sector, the more likely that the potential for growth in containerized exports will be realized.

In the Freight Chain

As described in Section 2.4, the container freight chain consists of numerous actors including truckers, transloaders, intermodal terminals, railroads, and SSLs. Our recommendations for them relate to broad categories of communication and investment:

- Convening representatives of the railroads and SSLs, through the offices of the Illinois Department of Transportation or Commerce and Economic Opportunity or Agriculture. This would be an opportunity for these freight-

⁹⁷ Visit the “U.S. Exporter Assistance” page on the Web site of the USDA’s Foreign Agricultural Service: http://www.fas.usda.gov/agx/exporter_assistance.asp. Resources for export financing also are described.

⁹⁸ From the Rochelle Forum, we learned that some farmers who currently sell to transloaders believe they could see a higher margin if they were able to load containers themselves. While this may be true, the current inspection system will make this difficult. Besides the infrastructure needed on the farm, FGIS would either have to provide inspectors at the farm site to take samples as the products are loading, allow farmers to take samples which are later graded by FGIS, or license farmers as inspection agents. All of these options have issues related to their implementation and do not appear to be practical in the short run.

chain stakeholders collectively to address their concerns and needs to state-level policymakers, giving more weight and focus to economic-development opportunities involving the assets they control.

- There is a need for an organized effort to address the particular concerns of truckers hauling overweight container loads. This specialized industry niche requires support that groups like the Mid-West Truckers Association may not be able to provide.
- Freight-chain actors should recognize the potential to have their concerns addressed through participation in regional forums, such as CMAP's Intermodal Advisory Task Force.
- As regards investment, firms will invest in this business niche if they can satisfy themselves that there will be growth going forward and that an adequate return is feasible. Among the apparent investment opportunities are transloading facilities, transloading technology, container staging-and-storage yards, and rolling stock for container trucking and drayage. Also, intermodal terminals like Global III and LPC have plans for expansion, which will be implemented if justified by the traffic. Projections of growth in containerized agricultural exports are likely to be part of that calculation.

5.4 Need for Additional Research

There are opportunities for additional research, which would serve to expand upon this report and more generally to add to the discussion surrounding this very interesting business niche, for example:

- A report on Illinois exports of containerized value-added agricultural products, including processed foods.
- An analysis of the economic benefits of farmers who take advantage of the new shipping options at Global III and LPC.
- An evaluation of the local impacts of intermodal terminals, so that other municipalities statewide could benefit in the event that rail carriers seek to establish similar facilities.
- A report exploring the role that Illinois' regional and short-line railroads might play in helping to build the channel for containerized agricultural exports.
- An updating of Vachal and Reichert's 2001 report on containerized grain and oilseed exports, expanding it to include DDGS.

- A market report on the specific containerized agricultural products gaining interest among overseas buyers (e.g., IP grains, non-GMO soybeans, organics, hay) that could be produced and exported by Illinois farmers.

Acknowledgements

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- Bo DeLong, The DeLong Co., Inc.
- John Grueling, Will County Center for Economic Development
- Judd Hulting, Illinois Soybean Association
- Eric Jackson, The Scoular Company
- Kim Janssen, Illinois Department of Agriculture
- Tom Jennings, Illinois Department of Agriculture
- Jack Lavin, Illinois Department of Commerce and Economic Development
- Greg Millburg, DeKalb County Farm Bureau
- Richard Paullin, Illinois Global Partnership, Inc.
- Lee Prunty, Walker-Schork International
- Craig Ratajczyk, U.S. Soybean Export Council, Inc.
- F. Gerald Rawling, Chicago Area Transportation Study (CATS)
- Lyle Roberts, Illinois Soybean Association

- Kevin Rund, Illinois Farm Bureau
- Mark Schleusener, U.S. Department of Agriculture
- Mark Schneidewind, Will County Farm Bureau
- April Taylor, U.S. Department of Agriculture
- Phil Thornton, Illinois Corn Growers Association
- Rod Weinzierl, Illinois Corn Growers Association
- Ken Wise, City of Rochelle
- Adel Yusupov, U.S. Grains Council

This report was researched and written by Dean Ennes, Robert Heuer, and Warren King. The views expressed are our own, and we are responsible for any errors, omissions, or inaccuracies.

Appendix 1: Rochelle Forum

Agenda, Questions for Breakout Sessions, and List of Attendees



Capitalizing on Containers:

**Assessment of an Agricultural Development Opportunity for
Northern Illinois**

September 6, 2006
Holcombe State Bank
Rochelle, Illinois

Agenda:

I. Welcome-Lee Prunty & Ken Wise (10:15am)

II. A series of brief presentations (10:30-12:00pm)

- Bob Heuer & Warren King, WellSpring Management

The study consulting team describes project scope /forum purpose.

- Phil Thornton, Value Enhanced Project Director, Illinois Corn Growers Association

The economics driving this new shipping trend.

- Judd Hulting, Domestic Marketing Programs Manager, Illinois Soybean Association

New U.S. Soybean Board study: "The Network for Containerized Soybean Exports."

- Jim Black, General Manager, Maplehurst Farms

Grain handler's perspective on relationship building/logistical challenges.

- John Grueling, President/CEO, Will County Center for Economic Development

Facilitating business at BN's Logistics Park Chicago in Elwood.

- Ken Wise, Former Economic Development Director, City of Rochelle
Facilitating business at UP's Global 3 in Rochelle.
- Gerald Rawling, Director of Operations Analysis, Chicago Metropolitan Agency for Planning

How agriculture's opportunity fits into the regional freight system:
"Chicago Gateway," cargo hub of North America.

III. Q/A session during (box/container) lunch (12-12:30pm)

IV. Breakout sessions (12:30-1:00pm)

Three small group discussion on farm supply; business infrastructure development; or government policy

V. Breakout summaries (1:00-1:15pm)

VI. Wrap up (1:15-1:30pm)



Capitalizing on Containers:

**Assessment of an Agricultural Development Opportunity for
Northern Illinois**

September 6, 2006
Holcombe State Bank
Rochelle, Illinois

Questions for Breakout Sessions:

Farm Supply Roundtable

- Will growth in container shipments allow farmers to diversify production? If so what new crops might be possible?
- Do farmers need more storage on farm to take full advantage of containers?
- Do farmers need more equipment for conditioning grain on farm to take full advantage of containers; i.e. dryers?
- What can farm bureau and extension services do to educate/assist farmers with this opportunity?
- How do USDA farm programs need to change for farmers to take advantage of this opportunity?
- Where are the opportunities for farmer-business collaboration to promote container shipments?

Business Infrastructure Roundtable

- What changes are needed to enable container shipments to be as efficient as hopper or barge shipments?
- Is there a role for regional or short line railroads in the movement of containers?
- In your opinion, is container shipment viable enough for business investment in new equipment or facilities?
- Where are the opportunities for business-farmer collaboration to promote container shipments?
- How can economic development agencies help facilitate this opportunity?

Government Policy Roundtable

- What current policies or procedures hamper container shipments?
- What should state/federal officials do to promote container shipments to buyers?
- What public investments are needed to enhance container shipments?
- What are the most effective forum(s) or group(s) to speak with government about needs of farmers and business?



Capitalizing on Containers:

**Assessment of an Agricultural Development Opportunity for
Northern Illinois**

September 6, 2006
Holcombe State Bank
Rochelle, Illinois

List of Attendees:

Jeff Adkisson, Executive Vice President, Grain and Feed Association of Illinois

Andre Ashmore, Manager, Local Government Affairs, Illinois Department of
Commerce and Economic Opportunity

Steve Bemis, Treasurer, DeKalb County Farm Bureau

Jim Black, General Manager, Maplehurst Farms

Don Cappel, Cappel Seeds

Leonard Carmichael, Owner, Maplehurst Farms

Tom Carper, West Central Region Manager, Illinois Department of Commerce
and Economic Opportunity

Dean Carr, Vice President, 1st Farm Credit Services

Chuck Cawley, farmer and District 2 Director, Illinois Farm Bureau

Roger Dahlstrom, Senior Research Associate, Regional Development Institute,
Northern Illinois University

Doug Dashner, Assistant Manager of Finance, DeKalb County Farm Bureau

Steve Drendel, Drendel Farms, Member of DeKalb County Farm Bureau Board
of Directors

Modupe Edeoga, Research Associate, Regional Development Institute, Northern Illinois University

Dean Ennes, Consultant, WellSpring Management

Ken Erhardt, Vice President, CoBank Commercial Agribusiness

Peggy Friday, Development Coordinator, City of Rochelle

John Grueling, President and Chief Executive Officer, Will County Center for Economic Development

Mike Hardt, Manager, DeKalb County Farm Bureau

Brian Harger, Research Associate, Regional Development Institute, Northern Illinois University

Bob Heuer, Consultant, WellSpring Management,

Roger Hopkins, Executive Director, DeKalb County Economic Development Corp.

John Horn, County Extension Director, DeKalb County Unit

Judd Hulting, Director of Marketing and Special Projects, Illinois Soybean Association

John Husk, General Manager, Elburn Coop

Bob Hutcheson, Farmer

Warren King, President, WellSpring Management

Greg Kuhn, Senior Research Associate, Regional Development Institute, Northern Illinois University

Jeff Mauck, Manager, Northern Crossing

Greg Millburg, Manager, DeKalb County Farm Bureau

Nancy Mulcahey, Northwest Region Manager, Illinois Department of Commerce and Economic Opportunity

Randy Panzer, Vice President, 1st Farm Credit Services

Steve Pitstick, Farmer, Former President of Kane County Farm Bureau

Lee Prunty, General Manager, Walker-Schork International

F. Gerald Rawling, Director of Operations Analysis, Chicago Area Transportation Study (CATS)

Lyle Roberts, Executive Director, Illinois Soybean Association

Kevin Rund, Senior Director of Local Government, Illinois Farm Bureau

Mark Schneidewind, Manager, Will County Farm Bureau

Floyd Schultz, President and Chief Executive Officer, Illinois River Energy

David Sparks, Regional Manager, CoBank Commercial Agribusiness

Scott Sparks, Seeds Division Manager, Hintzsche Fertilizer

Paul Taylor, Farmer, Member of DeKalb County Farm Bureau Board of Directors

Sherrie Taylor, Research Associate, Regional Development Institute, Northern Illinois University

Phil Thornton, Value Enhanced Project Director, Illinois Corn Growers Association

Rick Tolman, Chief Executive Officer, National Corn Growers Association

Dean Weers, Operations Manager, Prairie Central Co-op

Rod Weinzierl, Executive Director, Illinois Corn Growers Association

Ken Wise, Economic Development Director (retired), City of Rochelle

Appendix 2:

Thinking around the Box: Regional Planning and Development

The September 2006 Rochelle Forum exposed the need for a strategy to capture the productive capacity of the agricultural economy around the BNSF and UP railports. One participant suggested that the place to start is a follow-up meeting, where interested parties could discuss this report's findings in the presence of the secretaries of three State of Illinois agencies: the Departments of Commerce and Economic Opportunity, Agriculture, and Transportation.¹

The emerging market for containerized agricultural exports is a microcosm for a much larger challenge that Illinois can no longer afford to ignore. Starting at the cabinet level, these three agencies need to figure out how to fill the vacuum of understanding about how multi-modal freight transportation systems fit together for the benefit of the state's rural, agricultural economy. As the state's principal landowners, our farmers, foresters, and ranchers have a key role to play in the discussion through their trade organizations.

This essay explores the interrelationship of the following three points:

- Farm-sector interest in containerized agricultural exports demonstrates the need for a comprehensive statewide approach to freight planning.
- The enduring value of farmland for agriculture's sake should be a core element in the state's economic-development agenda.
- Regional planning efforts statewide will be more effective when farm profitability becomes a higher priority than farmland protection.

Agriculture and Intermodal

The railroads weren't considering agricultural customers when they invested nearly \$400 million in the Elwood and Rochelle rail intermodal terminals. However, the rural locations of these "ramps" created an unintended beneficial consequence – an opportunity for the local farm economy to fill empty containers for export. BNSF and UP located these new facilities in the hinterland in order to escape Chicago's congested roads and antiquated rail systems.² These

¹ Conversation with Judd Hulting of the Illinois Soybean Association, September 11, 2006.

² BNSF moved to Will County to take advantage of its main line's proximity to the Joliet Arsenal munitions plant, which the U.S. Army relinquished in 2000. Most of the 36-square-mile plot of land was used to create the nation's first tall-grass prairie park as well as a veterans cemetery. The redevelopment of a 3,000-acre parcel for industrial use is overseen by a state-created body of nine local officials: the Joliet Arsenal Development Authority. JADA didn't have a good land-use plan until approached by CenterPoint Properties Trust. The industrial developer built an intermodal and industrial business park, anchored by

investments created the capacity for an additional 1.5 million container lifts, which could absorb a decade's worth of volume growth – although the forecasts turned out to be understated.³

The Elwood/Rochelle moves signaled a trend toward “industrial inversion,” according to a recent Chicago Area Transportation Study (CATS) report.⁴ “Intermodal ramp locations once tended to follow established industry because ramps were often the conversion of a classification/general industry service yard. However, due to significant changes to logistics practices...it now appears that industry, often in the form of warehousing...follows, or co-locates with, the ramps.”⁵

As small, low-volume intermodal terminals close (19 remain in Cook County), newer and larger, outlying ramps encourage development of ever-larger warehousing units atop surrounding farmland.

An industrial building boom is transforming the western Will County landscape along the I-55 corridor. Millions of square feet of warehousing/distribution facilities have sprung up near LPC in recent years. CenterPoint Properties' holding alone has room to handle 12 million square feet of new industrial development. A significant volume of new industrial development has yet to materialize near slower-growing Global III, but the expectation has taken root. An economic-development consortium, the I-39 Logistics Corridor, defines its market territory as a 10,000-square-mile swath of land – stretching from Janesville, Wisconsin, on the north to Bloomington, Illinois, on the south.

People who build buildings regard farmland as “empty space” – giving the false impression that it is underutilized real estate. This perhaps explains the mindset that created a U.S. political economy organized around new real-estate development. But the “growth” around Global III and LPC mainly involves the handling of imports. (Foreign indebtedness has become so entrenched in the American psyche that the U.S. Census Bureau can put a positive spin on a one-

BNSF's 770-acre intermodal yard, Logistics Park Chicago. UP initially sought to build Global III in DuPage and Kane Counties. However, facing resistance, first from West Chicago and then Maple Park, UP was welcomed further west in Rochelle – known as “Hub City” – where city government has for many decades encouraged the development of a freight-based economy. CenterPoint Properties managed construction of a 1,230-acre intermodal facility that is the largest in the Midwest. Located on the UP main line, Global III is located near the intersection of I-88 and I-39.

³ F. Gerald Rawling, “[Intermodal Volumes III: Serial Measuring, Tracking & Anticipating Levels of Activity for Northeast Illinois](#),” Chicago Area Transportation Study (CATS), April 2006.

⁴ Ibid.

⁵ Ibid.

month trade deficit of \$64.3 billion.⁶) Consumer demand for foreign goods is so robust that companies like Wal-Mart readily incur a charge for the shipment overseas of millions of empty containers.

As the unanticipated containerized agricultural-export business shows, Northern Illinois farmland shouldn't be viewed as an empty vessel for concrete, asphalt, and rooftops. Fertile soils also provide the means for rural entrepreneurs to chip away at the U.S. trade imbalance. This fact was not yet evident last spring when CATS released its report on logistics trends.

CATS – the Chicago region's transportation-planning agency – is being merged into a new metropolitan Chicago organization created in spring 2006 by the Illinois General Assembly. The Chicago Metropolitan Agency for Planning (CMAP) will combine regional-transportation, land-use, and economic-development planning functions with the aim of helping the region do a better job of managing its assets. The farm sector needs to be at the table to ensure that agricultural concerns get the attention they deserve.

Forward Looking Public Policy

Agriculture's voice needs to be heard on freight policy. "The rapidly evolving business model demands an agile public policy with a responsiveness and effectiveness that secures the future at least as much if not more than it remedies the past," CATS found, citing such new "strategic economic development" models as the Route 34 Logistics Corridor public-private partnership, which concerns a long stretch of land running from Chicago to 30 miles east of the Mississippi River. "Regional research/operations analysis should now direct more attention to land use (notably warehousing), to trucking, and to cargo-handling technologies/processes."⁷

The author of the CATS report has since become convinced that the farm sector offers the best bet to fill a sizeable number of containers that currently return overseas empty.⁸ Clearly, the state's freight policy should also encourage an entrepreneurial climate that fosters synergies between these transportation assets and the established agricultural industry.

That the two rail intermodal terminals provide an export channel for ethanol processing co-products is but the first reason why economic-development policy

⁶ The U.S. international deficit in goods and services shrunk from \$69.0 billion in August 2006 to \$64.3 billion in September, the U.S. Census Bureau reports: <http://www.census.gov/indicator/www/ustrade.html>.

⁷ "[Intermodal Volumes III: Serial Measuring, Tracking & Anticipating Levels of Activity for Northeast Illinois](#)."

⁸ In his presentation at the September 6, 2006, Rochelle Forum, CATS Director of Operations Analysis Gerald Rawling cited agricultural shipments as a means to fill the growing volume of empty containers.

is wrong to assume that worthwhile private sector “growth” requires construction of buildings. Agriculture, too, is a rapidly evolving industry based on the development of land. Researchers are constantly improving crops – not just for food but also including recent new uses, such as soybean-based plastics, corn-based “pharmaceuticals,” and biomass that will help lessen U.S. dependence on foreign oil. Who knows? Perhaps someone will develop a crop-based container that, upon arriving to the other side of the Pacific, will be broken down and fed to livestock. Clearly, renewable energy will be a driving factor in rural redevelopment initiatives as clusters form through the application of the principle of “industrial ecology” – enterprises using by-products of neighboring industries as raw materials.⁹

Transportation assets will figure mightily in such clusters. To maximize the potential, IDCEO and IDOA should bolster economic-development policy with agricultural-development strategies that recognize farmland as an irreplaceable natural resource capable of providing renewable supplies of food, fuel, and industrial products for generations to come.

Traditional economic-development policy revolves around criteria that reward production systems relying on a one-time use of resources. Such policies fail to take into account the long-term potential for agricultural enterprises that – if properly cared for – can provide renewable resources for generations. Shouldn’t the state’s business-retention strategies provide advantages for agricultural producers, to ensure that they have the capability to accommodate new markets well into the future?

Farmland is critical to the production of much-needed renewable resources. This fact is well understood among conservationists, who know that farmers, ranchers, and foresters generate environmental goods and services for which there is no market compensation. Private landowners aren’t paid to soak up the rainfall that replenishes underground aquifers, or to provide wildlife habitat and scenic views. Some conservation groups favor a federally financed “green payment” – an environmental-stewardship program that would replace the commodity price-support system that has dominated federal farm policy for generations. Even many farm groups recognize this change may eventually occur at the federal level.

At the state and regional level, the focus must incorporate agricultural-development strategies into economic-development policy.¹⁰ The emerging

⁹ John Ehrenfeld, “Industrial Ecology: Environmental and Economic Boom,” an article in the Boston Federal Reserve Bank’s Fall 2006 issue of *Communities & Banking Magazine*: <http://www.bos.frb.org/commdev/c&b/2006/fall/industrialecology..pdf>.

¹⁰ “No public agency in the state of Illinois is promoting agricultural development in connection with local economies,” Sam Santell, Planning Director of the Northeastern Illinois Planning Commission, said in a January 2006 interview. Santell, who spearheaded the creation of Illinois’ only county-financed purchase-

business of containerized agricultural exports begs the question of how public agencies and private economic-development agencies can help rural entrepreneurs capitalize on farmland for agriculture's sake. The answers will help create a market-based approach to check ever-outward suburban expansion.

Can Regional Planning Be a Tool for Agriculture?

Regional planners have long recognized that sprawling development patterns demand costly services and infrastructure to be stretched over ever-greater distances, fueling urban and suburban decline as well as the squandering of water and other natural resources. Planners advocate various incentives to make redevelopment of existing communities as attractive as new development of farmland. Such remedies amount to land reform, but the region's principal landowners – agriculturists – haven't been actively involved and thus have good reason to be wary. At the same time, agricultural groups haven't been sufficiently proactive in articulating policy remedies that could help their members capitalize on new opportunities along the urban edge.

The resulting policy void plays into market forces that can leave farmers on the suburban fringe with no option but to sell to suburban subdividers. The Internal Revenue Service allows such landowners to avoid paying capital-gains taxes by using the proceeds from the sale to make a "like-kind exchange" for substantially larger land tracts in outlying areas.¹¹ Such land swaps drive up rural farmland prices to the point that few farmers in outlying counties can afford to expand their operations.

Landowners in the shadow of metropolitan areas should be able to retain the right to derive speculative value from their property. They may be less inclined to exercise that right if farm operators have enough confidence about their future prospects to continue investing in their businesses.

Drawing farm, forest, and ranchland owners to the table is one key to effective regional planning. Focusing on farm profitability, rather than farmland protection, figures to be the best method to engage the farm sector in efforts to promote sustainable agricultural economies on the outskirts of metropolitan areas.

Agricultural-development strategies must start from the realization that Northeastern Illinois agriculture consists of more than traditional grain/livestock production. Many entrepreneurs take advantage of their proximity to nearby populations through higher-value production in such urban-edge market segments as greenhouses, nurseries, and sod; fresh-and-local food systems; the

of-development-rights farmland protection program in his previous capacity as director of planning for Kane County, died in April 2006.

¹¹ Robert Heuer, "Investors Keep Farmland Value Steady;" *Ag Lender*, April 2000.

equine industry; agricultural support industries; forestry; and “agri-tainment.” But policymakers lack an analytical framework to measure the current value of this broader agricultural industry, let alone the potential value if sustained over several generations.

The timing to tackle this challenge has never been better. In spring 2006, the Illinois General Assembly voted to merge Chicagoland’s two regional planning agencies into a new organization called the Chicago Metropolitan Agency for Planning. CMAP will replace CATS and the Northeastern Illinois Planning Commission (NIPC). As one of Illinois’ 14 designated metropolitan planning organizations, CATS has served as the conduit for federal transportation dollars in the six-county Northeastern Illinois area – and has used that authority to plan, program, and implement transportation improvements.

During the same half-century-long period, its sister agency NIPC has built on its land-use planning expertise to become the region’s best source for employment and population forecasts. CMAP’s mission is to combine transportation and land-use planning efforts in coordination with economic-development efforts. CMAP’s leadership acknowledges the need to actively engage agriculture.¹²

The farm sector needs to be at the table to ensure that agricultural concerns get the attention they deserve.

Regional Freight Planning in Transition

Farm-sector input could help spark regional and statewide freight policymaking initiatives. In November 2006, CMAP invited interested parties to help reconfigure the CATS Intermodal Advisory Task Force.¹³

Co-chaired by government-relations officials from BNSF and UP, the Intermodal Advisory Task Force is recognized at the national level as a pioneer in freight planning and analysis. Yet, it’s always been an orphan in an agency focused on consumer-transportation needs. Formed in 1994 at the request of the U.S. Department of Transportation, the Task Force has been the most consistently visible state-funded multimodal freight-planning effort – collecting data, conducting analysis, and providing a forum for discussion. Task Force reports have shown freight’s contribution to the regional economy, raising awareness and inspiring high-profile forums that have generated news coverage publicizing the burdens and benefits associated with Chicago’s place as a global cargo

¹² Interview with CMAP Deputy Director Bola Delano, September 22, 2006.

¹³ CMAP’s Delano asked for volunteers at the Task Force’s November 13 meeting. The meeting doubled as a retirement party for CATS’ Director of Operations Analysis Gerald Rawling, who has led Task Force activities since its inception.

hub.¹⁴ This little-appreciated underpinning of our economy has failed to attract sustained top-level political leadership.

The Task Force's initial focus was to convene representatives of the railroad and trucking industries. The two groups discovered a mutual interest in improving "connectors" – those streets that link rail intermodal terminals to National Highway System roads. The Task Force itemized a list of 63 freight-targeted projects to improve mobility and performance and then found implementers to execute 70 percent of those connector projects. This success helped persuade the U.S.'s largest railroads (all six Class I railroads have lines in and out of Chicago) to work with government agencies on an infrastructure improvement plan called the Chicago Region Environmental and Transportation Efficiency Program (CREATE).

With one-third of U.S. freight originating, arriving, or passing through Chicago, there's no question that eliminating notorious bottlenecks is of national interest. The railroads sought \$900 million in federal funding for a \$1.5 billion CREATE program, but secured only \$100 million in the last federal transportation bill – that thanks to an earmark from James Oberstar (D-MN), the incoming House Transportation Committee chair.

Railroad lobbyists say the Illinois congressional delegation doesn't appreciate freight's importance to the state's economy. Until the topic came up at our September 2006 Rochelle Forum, there was not widespread understanding among farm leaders about CREATE – an indication that the railroads need to do a better job of partnering with customers.

Calling All Shippers

Broadening the base of freight stakeholders was the subtext of the November 2006 conference "Making the Chicago Region More Competitive in the Global Supply Chain." Over 200 business, government, and freight-industry leaders attended a day-long forum that organizers called a "first annual event."¹⁵ IDOT Secretary Tim Martin conceded that the state has done a poor job of addressing freight issues.¹⁶ An unspoken goal of the event was to build momentum for the General Assembly's passage of an infrastructure funding bill in the spring 2007 session.

¹⁴ See Metropolitan Planning Council's "Critical Cargo" from 2002 (www.metroplanning.org); and Chicago Metropolis 2020's "Delivering the Goods" from 2004. www.chicagometropolis2020.org.

¹⁵ The event co-sponsors included the Chicagoland Chamber of Commerce, Chicago Metropolis 2020, University of Illinois-Chicago, and World Business Chicago.

¹⁶ In private conversation with one of this report's authors, Martin said IDOT has paid little attention to freight in the past.

Chicago is driving development of a statewide freight agenda; agriculture's involvement can help make it happen. Farm-sector interest in containerized exports – and, indeed, competitive use of all shipping options – can help focus cabinet-level attention on the need for a more comprehensive approach to freight planning statewide. “Comprehensive” means inclusive. Too much freight planning occurs in a vacuum or is too scattershot to be effective. Farmers and ranchers tend to talk to suppliers one-on-one instead of in group discussion – that is, an intermodal discussion about how to fit the various modes into a seamless system for handling and transport.¹⁷

Adequate transport services are clearly a key to agriculture's future success. Yet, ensuring the efficient delivery of agricultural products to market requires alliances with others in the supply chain.

One place to start is through participation in regional forums like CMAP's Intermodal Freight Task Force (its new focus is likely to be trucking). At next fall's second annual logistics forum, farm-sector groups might correct the misimpression presented at the first event, namely that UP's move to Rochelle – well beyond outlying western suburbs – represents a loss for the Chicago region.

Rochelle, in fact, is evidence of Chicago's place at the center of the American Midwest. An intermodal terminal is like the entrance to an interstate highway, since people will travel a long distance to gain access. Farmers and co-ops from as far away as eastern Minnesota would like to make use of UP's intermodal terminal. Short-line railroads from six-states could provide delivery. Yet, shipping brokers complain that the railroads price the small guys out of the market, extending favorable terms only to a handful of preferred customers. The railroads say they will work with anyone who will provide sufficient volume. And maybe it is true that railroads have little choice: they can charge more to haul a full container than an empty one. It is somebody else's job to generate the economic activity that will result in full containers. The State of Illinois should stimulate investment in systems to access product from throughout the Midwest, but that won't happen without pressure from several states and the federal government.

USDA has brought some clarity to the freight issue, hosting transportation summits in Kansas City, in 1998, and St. Louis, in 2000. Both forums were well attended by bulk-grain industry representatives, who recognized that the basis for U.S. agriculture's competitive advantage – a far flung network of rail, road, and water systems – needs an overhaul. The expressed purpose of the events was to start to address “the systemic, long-term transportation needs of all of agriculture.”¹⁸

¹⁷ Robert Heuer, “Where's Agriculture's Transportation Agenda?” *Ag Lender*, April 2001.

¹⁸ *Ibid.*

Midwest agriculture and, indeed, the entire Midwest freight-and-logistics sector, suffer from the absence of an ongoing commitment to government-sponsored public discussion among participants in a fast-changing and vital industry. Here in Illinois, IDOT may be best suited to take the lead, but this train would go a lot further and a lot faster if it were pulled by three departmental engines.