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## **Transportation options exist on West Coast to increase soybean, meal export competitiveness**

### **MARKET SOLUTIONS LLC**

*Market Solutions LLC is a leading research-based strategy consulting firm with expertise in transportation and international markets and that analyzes demand and shipping options in the Western U.S., especially California, Canada and Mexico. The company studied the West Coast transportation options for soybean and meal exports at the request of the United Soybean Board, American Soybean Assn. and state soybean boards in Minnesota, North Dakota, South Dakota, Nebraska, Iowa, Illinois and Michigan.*

Half of the world export market for soybeans and products and much of the potential for growth is located in Asia. Shipping times and ocean freight rates from the U.S. West Coast to Asia are substantially lower than from the Gulf of Mexico, but domestic transportation costs have been a barrier to more West Coast exports. As U.S. soybean production continues to increase in the Upper Midwest and move westward, the potential to export soybeans and soybean meal via the Pacific Coast is of growing interest.

Achieving transportation economies is one key to maintaining the export competitiveness of U.S. soybeans, especially as competitors in South America make substantial investments to improve their infrastructure and cut transit times and costs. With the Uruguay Round Agreement creating the World Trade Organization, tariff barriers to exports of soybeans and products have been reduced in many markets. Increased trade has made a number of other barriers to trade and export competitiveness relatively more important, including transportation costs and bottlenecks. Transportation costs function like a tariff in making exported soybeans and meal less competitive in international markets.

Lower-cost transportation options can have a direct effect on returns that reach the pockets of soybean producers. Transportation and handling costs make up a substantial share of the delivered cost of soybeans and meal to foreign markets, often 25-40% as much as the price producers receive. Previous analysis determined that export volumes of soybeans and meal shipped via West Coast ports can be directly linked to improved basis for Upper Midwest soybean producers, but volumes have not been sufficient to make westward shipping a consistently viable option.

### **West Coast ports**

Only 6% of soybeans and 3% of soybean meal export shipments moved via West Coast ports on average during 1997-99. By contrast, 18% of corn exports and 41% of wheat exports moved via Pacific ports. During 2000, export shipments of 1.6 million metric tons of soybeans off the West Coast was a sharp increase but still represented about 8% of total exports, just recovering to pre-Asian crisis levels.

### **Top ports for soy exports**

Most of the soybeans and meal exported via Western ports pass through Pacific Northwest (PNW)

ports between Seattle, Wash., and Portland, Ore. Small quantities are exported through California ports in the Los Angeles and San Francisco Bay areas. Soybean exports via Seattle and Tacoma peaked at close to 1 mmt each in 1995 and 1996, respectively. By way of contrast, the PNW plus Vancouver, B.C., handled about 30% of total Pacific Coast trade, with Southern California ports, Long Beach and Los Angeles, handling 55% of total trade and Northern California Ports handling about 15%. Longview, Wash., has been the primary western port for soybean meal export shipments, followed by Kalama, Wash., Portland and Vancouver, Wash. Occasional small quantities have been shipped via other ports in Washington, Oregon and California. Exports via Longview peaked at 172,000 metric tons in 1999, the most recent year for which full data are available.

### **Export destinations**

Top export destinations of West Coast soybean shipments have been Taiwan, Thailand, Japan, the Philippines, Malaysia, South Korea, China and Indonesia. The largest quantity shipped to a single destination was 1.1 mmt to Taiwan in 1997.

Thailand, Japan and the Philippines increased quantities of soybeans shipped via the West Coast between 1997 and 1999. One of the most striking features of exports via Western ports is their extreme variability from year to year. Such volatility is likely to make it difficult to justify the investment needed to make transportation and handling more efficient and less costly.

Surprisingly, most of the soybean meal exported via the West Coast has gone to Australia and New Zealand, averaging 106,000 and 51,000 mt, respectively, during 1997-99. This amounts to most of the U.S. soybean meal shipped to Australia and New Zealand. Volumes to the top Asian destinations, the Philippines, Japan, Malaysia, Vietnam and China, have been consistently low. Most soybean oil shipped off the West Coast has been bound for India, South Korea, Japan, Hong Kong and China. All quantities are small, however, with exports averaging 2,000-3,000 mt each for the top three markets.

### **Western U.S. demand**

Much of the West's livestock and poultry production is located in California's Central Valley, east of San Francisco in the San Bernardino valley and east of Los Angeles in the San Joaquin valley. Based on average soybean meal usage nationwide, livestock and poultry in the western states would be expected to consume 3.7 mmt of soybean meal annually. This makes the western states a market half as large as total soybean meal exports and twice as important as 1999-2000 exports of soybean meal to Asia.

High-cost domestic transportation is encouraging West Coast livestock and poultry producers to use feed ingredients that can be shipped by ocean freight. Limitations on use of non-U.S. flag vessels between U.S. ports (the Jones Act) make it more likely that feed ingredients from other countries will be more competitive than U.S. grains and oilseeds. Barley from Europe and cottonseed from Australia and Africa are sometimes competitive in California feed markets in part because of the high cost of domestic transportation. Transportation improvements that will make West Coast markets more liquid for exports can also serve an important domestic market as well. The domestic marketing opportunities merit increased analysis.

### **Potential export shipping**

In looking at potential ports from which soybeans and meal could be exported, they can be viewed in three clusters: Stockton and Sacramento -- Inland Ports with access to San Francisco Bay and the Central Valley; Richmond, Oakland and San Francisco -- on San Francisco Bay, and Long Beach and Los Angeles -- in Southern California.

Stockton and Sacramento have traditionally served as export ports for California wheat and rice production. Both are in a state of transition and looking for opportunities to handle additional bulk

commodities. These ports probably have the greatest medium-term potential as alternatives to the PNW if efforts are made to make it more economical to export via the West Coast while increasing access to domestic feed markets. Both ports are located inland, with access to livestock and poultry producers in Central California and access by deep-water channel to San Francisco Bay.

Ports on San Francisco Bay, including Richmond and Oakland, have advantages in terms of increased draught and shorter steaming times compared to Stockton and Sacramento. The disadvantages will be in terms of congestion faced on the urban fringe and greater distances to California feed markets.

The Southern California ports of Long Beach and Los Angeles are focusing on building their inter-modal business. Combined, they are already the largest container port in the U.S., and container traffic is expected to triple over the next 20 years. The port has substantial bulk handling capacity, primarily used for coal and petroleum coke exports, but operates substantially below capacity due to freight costs, labor issues and congestion. With transportation improvements in the Alameda Corridor slated to be completed in 2002, access will be easier, but increased grain shipments are not a priority for the port.

In looking to the future, there is potential to increase export shipments via California ports while taking advantage of substantial market opportunities with the domestic feed industry. This will not happen given the current rail rate structure to ports in California, however. Important infrastructure investments and a plan that will convince investors and shippers that the potential volume can justify the required investment and rail rates will be needed to make increased soybean and meal exports via California more viable.

### **Changing economics**

Ocean freight rates have been an important factor affecting flows of soybeans and meal via West Coast Ports. The spread between rates from the Gulf of Mexico to Japan and from the PNW to Japan has generally averaged \$8-10/mt. Conventional wisdom has been that about \$9/mt more freight moves West. Soybean exports via the PNW peaked in 1995, when the spread averaged \$14.16/mt. They fell sharply in 1998 when the spread averaged \$4.47, starting to rebound when the spread recovered to \$7.06 in 1999. Market Solutions believes this could represent a systematic shift in the economics of movements off the West Coast due to increased efficiency in rail transportation.

For example, on the Burlington Northern Santa Fe (BNSF), since 1995, average car capacity has been increased from 3,600 to 4,000 bu., but with unit and shuttle trains, cars are now turned around three times per month, compared to 1.3 turns in 1995. This means that monthly capacity has been increased from 10,400 cars per month to 18,000 cars per month even though the railroad actually has fewer cars.

Changing rate structures are designed to encourage this increased velocity. Where shippers have other options, the railroads are also setting rates designed to attract and retain their business. At the same time, the railroads are asking their customers to make investments that will help them achieve lower costs, investing in facilities that can load and unload 100- to 110-car unit trains in shorter and shorter periods is a prime example.

### **Costs of shipping**

In setting published rates for grains and oilseeds, the railroads are trying to attract cargo to the routes on which they have excess capacity. With substantial excess capacity on the Chicago, Ill.–PNW corridor, BNSF rates for shipping soybeans from Minneapolis, Minn., to Portland and Seattle are \$600 less per car than to neighboring Vancouver, B.C., over the Canadian border and more than \$1,100 less per car than on shipments to Stockton, Cal. For soybean meal, the difference is \$500 per car and \$775 per car, respectively.

The railroads have introduced rate structures designed to provide incentives to shippers to keep rail cars moving through unit and shuttle trains. As the volume and rotation commitments of shippers increase from a single car to contracts for 24 trip shuttle trains of 110 cars each, the cost on shipments from Minneapolis to the PNW is reduced \$1,000-1,250 per car, about 30-35%. One impact of these kinds of rate structures is to start to make rail a more viable alternative for shippers located further eastward than was previously the case.

Reductions in freight costs via unit train rates do not necessarily reduce the total cost of shipping from farms in the Upper Midwest to West Coast destinations. Trucks and short-line railroads are both playing a larger role in moving soybeans to unit train loading facilities. While these issues were not addressed in the current project, they are important for producers, as they have to deliver their soybeans to larger and more distant facilities. They are also important because producers and their neighbors pay the tax bills for road maintenance and invest to build the unit train loading capacity.

## **Canada**

The study looked at the Canadian market as a potential option for West Coast export shipping of U.S. soybeans and meal. It looked at demand in Canada's Western Provinces that might contribute to a more liquid Northwest market; transportation, handling and storage issues, including changing transportation policy in Canada, and developments at western ports, primarily Vancouver, that might be conducive to export transshipment of U.S. soybeans and meal.

Poultry and swine production is moving westward in Canada. Growth in the share of poultry production in British Columbia could be linked to the availability of feed ingredients due to export shipments via the Port of Vancouver. Strongest growth in swine production has been in Manitoba and Alberta. Reductions in transportation subsidies are promoting more use of feed grains in the Prairie Provinces while also drawing imports. Almost 40% of Canadian soybean meal imports now go to Western Canada. Growth in U.S. corn imports recently led to imposition of countervailing duties by the Canadians.

Canada's transportation policy has changed substantially since 1995 and, with it, the transportation, grain handling and storage systems. New legislation adopted in June 2000 has eliminated rate caps on export-bound Canadian grain and replaced it with a revenue cap. This allows the railways greater flexibility in setting rates.

The Canadian National Railroad (CN) was privatized in 1995 and has since acquired the Illinois Central and developed a long-term marketing alliance with the Kansas City Southern, extending its reach to Mexico. Plans for a CN merger with BNSF were dropped last year, when the Surface Transportation Board put a 15-month moratorium on rail mergers. CN is still working closely with the BNSF and is interested in exploring options to move more U.S. soybean meal, and eventually soybeans, westward.

Current published rail rate structures make shipping from the Upper Midwest to Vancouver a more attractive option than shipping to California ports but still less attractive than shipping to PNW ports between Seattle and Portland. On average, published rates are about \$500 per car higher for shipments to Vancouver than to Portland and Seattle from Minneapolis.

The Port of Vancouver handled 11.5 mmt of grain and oilseed exports in 1999. In addition to major shipments to Japan, China, South Korea and Taiwan, there were substantial shipments to Brazil, Mexico, Chile and the U.S. This included 445,000 mt of canola, 273,000 mt of wheat, 24,000 mt of barley and 13,000 mt of other cereals shipped to Mexico's Pacific Coast ports in 1998. Vancouver also handled a total of 403,000 mt of containerized grains and 640,000 mt of containerized animal feeds in 1999.

Vancouver is served by four railways -- CN, Canadian Pacific, BNSF and BC Rail. It has five major grain export terminals, including the Cascadia Terminal, owned by Agricore and Cargill, the

Saskatchewan Wheat Pool, United Grain Growers and Pioneer Grain Ltd. The Cascadia terminal, which handles 40% of the port's grain throughput, was recently upgraded to be able to unload 110 grain cars in six hours.

While the Port of Vancouver has a history of delays, labor difficulties and other problems, some blamed on past management of exports by the Canadian Wheat Board, it was averaging 3,333 rail car unloadings a week in late 2000, about 50% higher than all U.S. PNW ports combined at their peak.

Ports at Prince Rupert, B.C., and Churchill, Man., also provide interesting insights into the potential for transportation options to change over time.

## **Mexico**

Mexico is considered a market that could be served through export shipments via West Coast ports and also in terms of the potential to export U.S. soybeans via Mexico's western ports. Mexico's poultry and swine industries are growing rapidly. Much of the swine industry and important parts of the poultry industry are accessible via Pacific Coast ports. Canadian, Argentine and Australian oilseeds and feed ingredients are imported through western Mexico ports, and before Mexico's railroads were privatized, U.S. grain and oilseed exports reached these regions of Mexico from the Gulf of Mexico by transiting the Panama Canal and entering Pacific Coast ports. Port improvements on the Atlantic Coast mean that half of Mexico's grain and oilseeds imports now pass through Veracruz, but the potential of Pacific Coast ports remains.

Privatization of the Mexican National Railway in 1997 has resulted in three new railroads and an influx of investment. TFM, a joint venture involving the Kansas City Southern, is the primary railroad in the northeastern part of Mexico and was the first created in May 1997. Ferromex, partly owned by Union Pacific Southern Pacific but also working with the BNSF, began in 1998 and serves the Northwest.

While Pacific Coast ports accounted for only one-fifth of Mexico's grain imports during the first three months of 2000, this was a large increase over the previous year. Top Pacific ports for grain imports were Manzanillo, Guaymas, Lazaro Cardenas and Topolobampo.

Manzanillo, located closest to the livestock and poultry production center of Jalisco, is the second-largest Pacific Coast port, after Lazaro Cardenas, in terms of total volume handled. With a new high-speed grain import/export facility, it has potential that merits further consideration.

Guaymas, located in Sonora, is used as a benchmark for other ports because of its 800 mt per hour unloading capacity. It could serve as a destination for U.S. soybeans by sea. Union Pacific officials also voiced interest in it as a shipping point for U.S. exports.

Topolobampo, in Sinaloa, was originally conceived of as a shipping point for U.S. exports, providing the shortest route to the Pacific Coast from Chicago. As an import destination, it also services the livestock and poultry industries of Sonora, Chihuahua and Durango and has direct rail links southward into Jalisco and Guanajuato as well.

With the change going on in Mexico, and its huge potential as a current and future market, soybean producers should pursue this analysis of options further. Mexico could potentially be served via West Coast exports from the Upper Midwest. The potential as an avenue for export shipments is likely to become increasingly more attractive in the medium to longer term as Mexico's internal transportation infrastructure improves and bottlenecks at the border are reduced or eliminated.

## **Conclusions/recommendations**

Transport costs function like tariffs in reducing the competitiveness of U.S. products in international markets. For producers, with transport and handling costs to deliver to export customers that can

represent 25–40% as much as the farm price, addressing transportation issues is a key to growing markets and increasing returns.

PNW exports are still the short-term key to increased westward exports. The PNW is still constrained by liquidity issues that will need to be addressed. In order to best take advantage of changing opportunities in the PNW, it is recommended that soybean producer groups follow up on the fieldwork done in 1998 to get an updated view of changes along the range between Portland and Seattle. Changes in elevator and barge line ownership, as well as rail improvements, have all contributed to increased short-term potential for exports via PNW ports.

Opportunities in California should also be explored further. Of specific interest are opportunities via Stockton and Sacramento because of the proximity to substantial feed demand. Opportunities could develop at other California ports as well if there is sufficient interest and the investments in infrastructure are made to cut rail rates. At the present time, these are not yet high-potential options.

Options via Canada and Mexico, while not likely to offer major short-term opportunities, merit further attention because they can play an important role in developing the transport options that will give producers the bargaining power to get the best possible freight rates. Despite constraints in Vancouver, trans-Canada shipping is the first option to be pursued because it will help lower freight rates to the PNW.

All of the railroads contacted voiced an interest in identifying ways they can be competitive in providing more freight for soybeans and meal -- to West Coast U.S. ports, western Canada and Mexico. Success in making non-traditional shipping patterns work for increasing soybean and soybean meal export competitiveness will require that producers, grain companies and oilseed processors, the railroads, port authorities and federal, state and local officials work together and that export customers be included in the process.

For soybean producers to have an impact on the transportation costs that affect their competitiveness, an ongoing commitment to understanding their interests will be required, along with substantially more aggressive follow-through to make sure they make those interests known. This means tracking transportation-related market and policy developments at the national, regional state and local levels and ongoing analysis of the stakes in specific transportation options.

Producer groups will also have to provide leadership in getting options that are in producer interests on the table before business and government decision-makers and building coalitions of groups with interests at stake.

The report identified specific business- and policy-related areas that producers should address in order to help strengthen West Coast shipping as an option to improve competitiveness:

- \* Follow up dialog with players in the PNW, selected California ports, the railroads and ports in Mexico and Canada as well as export customers to share insights and raise interest in developing West Coast shipping options. Prepare for this with an update on PNW developments.

- \* Assess why Asian customers purchase so little soybean meal via the PNW and why buyers in Australia and New Zealand source almost all of their supplies that way. Use findings, together with ongoing surveys of crop quality, to develop materials that the American Soybean Assn. can use to work with international customers to get them to solicit bids for shipments via Western ports.

- \* Follow up to analyze in more detail the domestic marketing aspects of demand for soybeans and meal in the western poultry, livestock and feed industries. The goal should be to understand how best to become more competitive with imported feed ingredients like cottonseed and canola and how to get U.S. soybeans, meal and other feed ingredients delivered to the West Coast industries at a cost that will allow them to grow.

\* Put transportation-related policy issues on producer group agendas with a higher profile than has been the case in recent years. Some of the specific issues to watch are:

- (1) Public decisions affecting the competitiveness of rail, barge and truck shipping options;
- (2) Public funding for dredging and port improvements that increase options for export shipments;
- (3) Reconsideration of Jones Act restrictions on movements of commodities by water between U.S. ports;
- (4) STB rail merger guidelines and other regulatory actions vis-a-vis the railroads;
- (5) The proposed Small Railroad Preservation Act that is likely to be considered by Congress again in the current session;
- (6) Mississippi River issues affecting navigation, especially above St. Louis, Mo., and
- (7) Environmental issues affecting the Columbia and Mississippi rivers, among others.

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