Southwest Washington Regional
Transportation Council

Clark County Freight Mobility Study

Technical Memorandum:
Task 2A: Global Trade and Transportation Trends

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Prepared For:
RTC

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1. Purpose and Introduction

This memorandum identifies global trade and transportation trends relevant to Clark County and how they might impact the manner and frequency with which shippers and logistics service providers will utilize the global multimodal transportation system and, specifically, Southwest Washington's multimodal transportation system in the future. The focus of this memorandum is on the long term system needs for the next 30 years. The purpose of this memorandum is to clarify the issues impacting freight movement in Clark County to assist decision makers to make informed decisions in order to take advantage of economic development opportunities.

The condition of Southwest Washington's multi-modal transportation system is better than that of many other regions, but there are congested areas where the transportation network can be improved and made more attractive for shippers. More freight flowing without delay in, out and through the Port of Vancouver USA and Clark County, translates into increased economic benefit for the region. It is important for the Regional Transportation Council to find ways to make the multi-modal transportation system as efficient as possible through implementation of sound strategies and policies and funding transportation infrastructure improvements. Freight mobility is directly connected to a robust economy.

2. Summary of Recommendations

The Regional Transportation Council can take actions to take advantage of trade and transportation trends identified in this memorandum. In order to do so, the following transportation system needs improvements should be addressed:

Trucks handle the largest volume of freight traffic in Clark County. The key issues for truckers are congestion, travel-time reliability, and a need for additional capacity. This includes improvements across the Columbia River and on key routes within Clark County (I-5, I-205, SR 14 among others).

Rail is the next largest carrier of freight traffic in Clark County. Key issues also include congestion, port access and mainline capacity limitations. The proposed Vancouver Bypass and the Port of Vancouver Freight Access Project will greatly improve rail traffic flows. Improvements to the shortline operation in Clark County will also benefit shippers.

All three ports in Clark County are expanding their portfolios of commercial/industrial lands. Private developers are also positioning their properties for the economic upturn. Improvements in truck and rail access are required to make these efforts successful, particularly improved freeway access.

Barge operators need improvements in the navigation channel and will also benefit from road and highway improvements.

Specific improvements to address the trends identified in this memorandum are:

Trade and transportation trends	RTC actions
Ports and ocean carriers	
Exports	Continue with port modernization programs and ensure transportation system can accommodate increased exports of drybulk and breakbulk to China
Short sea shipping	Ports should continue to pursue
Motor carriers	Invest in an improved transportation system prior to renewed growth in truck cargo
Rail	In order to ease congestion, the Port of Vancouver needs additional arrival/departure tracks, additional sidings, and other rail improvements
Trends in Shipper Strategies	
Modal shifts	Ensure both truck and rail capacity to accommodate either as shifts occur
Port diversification	Make roadway and rail improvements to take advantage of diversification
Decentralization of distribution centers	Address company distribution center location selection criteria by improving transportation system, developing key freight routes, ensuring proper zoning
Growth in internet sales	Ensure capacity to accommodate more integrator (e.g. FedEx, UPS) trucks
Near-sourcing	Unlikely to impact Clark County

3. Current Conditions

Shippers utilizing Washington's multi-modal transportation infrastructure import, export, and sell domestically. Moreover, companies based outside of Washington also make use of Washington's transportation system to get their products to market. Since a sizable portion of the freight moving in Washington either originates or is destined to locations outside of Washington either in the U.S. or foreign countries, Washington's transportation facilities link shippers with the world.

Usage of the various transportation modes and transportation networks and corridors is influenced by shipper supply chain strategies, which are fluid, particularly as supply chains are trending towards 10,000 miles in length and increasing in complexity. Shippers adjust their supply chain strategies as market conditions and global and domestic operating environments change. Shippers can quickly decide to bring cargo into new port gateways or airports, or shift cargo from one transport mode to another. However, four basic principles underlie all supply chains: the desire of shippers to reduce costs, improve supply chain efficiency, improve time-to-market, and deliver better service to customers.

The current recession will slow freight activity for the next five to ten years. The current severe recession coupled with prior unprecedented increases in fuel costs is causing shippers, carriers and developers to change their operations. Cost containment is a central theme to these efforts, across all modes of transportation as well as for commercial and industrial firms. These conditions will linger for the near-term future (approximately five years). In the long-term, growth will resume, but Clark County must ensure its transportation system has adequate capacity to capture that growth.

4. Ports and Ocean Carriers

4.1 Recent Trends and Current Conditions

In 2007, there were 15.9 million tons of exports and 1.6 million tons of imports on the Washington side of the Columbia. The main Columbia River cargoes are breakbulk, dry bulk, and automobiles. Bulk and breakbulk vessel operators have been negatively affected by the economic crisis as shippers retrench. “Even before breakbulk traffic softened late last year, the industry was bracing for tougher times amid an accelerating emigration of traditionally breakbulk cargoes such as steel and forest products to containers.”[1] Regarding the dry bulk market, Drewry Shipping Consultants predicts “demand levels this year will drop 11 percent, while the fleet will grow 4 percent” and the balance between supply and demand “is not expected to narrow until 2014.”[2]

There is over-capacity in all vessel types and on all trades around the world. This has resulted in ocean carriers changing vessel routing and making other operational modifications such as vessel layups to reduce costs. Over-capacity is also causing an erosion of rates for all cargo types and may lead to ocean carrier merger/acquisitions and consolidations.

4.2 Future Trends and Opportunities

Exports. Since the Columbia River ports’ proportion of cargo in containers is small, the main opportunity will continue to be in export of drybulk and breakbulk. As the recession eases, China’s demand for resources will increase once again. The ports of Vancouver USA and Portland should continue with their modernization programs in order to take advantage of the opportunity for increased exports to China and other countries. The land-side transportation system also must be able to accommodate increased growth in freight.

Short sea shipping. Short sea shipping refers to shipping cargo on inland and coastal waterways instead of via trucks or rail on land. Short sea shipping is used successfully on the Columbia River system to transport containers and solid waste on barges. It also is used along the Pacific coast to transport petroleum from California to the Pacific Northwest.[3] The Columbia River ports should continue to pursue short sea shipping opportunities, for example by building small container terminals to handle short sea vessels.

5. Motor Carriers

5.1 Recent Trends and Current Conditions

The recession of 2008 and 2009 and resulting decreased demand severely impacted motor carriers and a large number have exited the market through bankruptcies despite the lower price of fuel, which has fallen since mid-2008. According to an Avondale Partners report issued in late April 2009, "480 trucking companies went out of business in the first quarter."[4] Less-than-truckload carriers have been hurt particularly hard because they have large truck fleets that perform short-hauls and networks of cross-dock terminals where they handle freight, both of which are fixed assets.

Even with fewer trucking companies, there is still excess capacity in the market. "The faltering economy is forcing truckload carriers to deal with 50 to 100 percent more excess capacity than existed two years ago, according to Wall Street analyst Thom Albrecht of investment firm Stevens."[5] So if freight volumes don't pick up soon, more motor carriers will find themselves in financial trouble.

The motor carrier model is rapidly changing. All types of carriers are scrambling for business. "Third-party logistics operators, brokers and even truckload carriers looking for new sources of freight are quite willing to dip into the less-than load pool for market share."[6] Carriers are discounting heavily and playing more in the spot rate market as volumes have declined. These price decreases benefit shippers, but take a toll on the balance sheets of motor carriers.

In recent years, motor carriers have experienced high driver turnover rates and an aging driver population, and have had difficulty recruiting new drivers, which drives up operating costs. Federal Hours of Service is another issue impacting trucking companies especially long-haul carriers. As a result, motor carriers are partnering with intermodal marketing companies or establishing their own. This enables truckload carriers to move their West Coast origin cargo destined to locations in the Midwest and beyond on rail to a hub within 500 miles of the final destination. This also addresses the shortage of long-haul drivers, who now prefer to be at home each night. These issues have forced some motor carriers out of business, particularly those who have been unsuccessful in raising their rates commensurately.

5.2 Future Trends and Opportunities

Cargo volumes are not expected to rise dramatically in the near-term so it remains to be seen how bad the fallout in the motor carrier industry will be. But because many trucks have been taken out of service, shippers might face a lack of capacity to a certain degree in various regions once volumes rise and growth returns to a more normal pattern. Most likely this will occur in more remote areas.

The higher cost of fuel is also impacting motor carriers, though they generally try to pass on fuel price increases to customers in the form of surcharges. But motor carriers must walk a fine line because, as truck rates increase, shippers whose supply chains cannot tolerate rapid or sizable price increases tend to shift some cargo to rail, when possible.

Lower demand for trucks is reducing the volume of truck traffic on Clark County's highway system, but this is a temporary phenomenon. As the recession eases, the volume of cargo moved in trucks will begin to grow again and congestion will increase accordingly. Investing in an improved transportation system will help freight movement, commercial/industrial development, and commuters.

6. Rail

Class I railroads began providing volume discounts in recent years for hook and haul unit trains of several hundred cars because they prefer it over picking up individual or small lots of cars along the way.[7] This is having an effect on grain and other dry bulk operations in the Columbia River. The carload market (e.g., coal, autos, chemicals, cotton, agricultural and bulk products, etc.) has had a severe equipment capacity shortage. Although the equipment shortage has abated somewhat, these trends could drive some business to trucks and possibly barge.

Vancouver contains the I-5 north-south corridor, connectivity to the Columbia River east-west corridor, a BNSF rail yard, and the Port of Vancouver, through which approximately 100 trains operate per day. The area is congested because north-south and east-west traffic cross at-grade and local traffic moves at slow speeds.[8] In order to ease the congestion, the Port of Vancouver needs additional arrival/departure tracks, additional sidings, and other rail improvements. Two projects are planned: the Vancouver Bypass and the Port of Vancouver Freight Access Project. The Vancouver Bypass includes a new mainline track around the Vancouver yard, grade separation at West 39th Street, and siding tracks on the west side of the yard. The 39th Street bridge began construction in spring 2009 and is anticipated to open in late 2010. Site preparation for the Vancouver Rail Yard work began in January 2009 and the project is scheduled for completion in spring 2013. The Port of Vancouver Freight Access Project includes a grade separation at the main entry, re-routing exiting traffic, and reconfiguration of yard tracks to accommodate longer trains.[9]

7. Trends in Shipper Supply Chain and Distribution Strategies

7.1 Modal Shifts

The increase in fuel prices in 2008 precipitated a shift from truck to rail for international container shipments. As the price of fuel fluctuates in the future, shippers will adjust their usage of these two modes whenever possible to take advantage of the least-cost/best value model, as supply chains are dynamic and ever-changing. This means that, over time, modal shifts will alternate between rail to truck and truck to rail depending upon the price of fuel, available capacity, and shipper time-to-market strategies. However, shippers of fast-moving-consumer-goods, time-sensitive and perishable goods will continue to use truck as a preferred mode regardless of the price of fuel.

"Railroad service improvements and changing freight economics have made regional intermodal service a viable option for shippers in certain lanes. Railroads have generally held a cost advantage moving international and domestic shipments of consumer goods more than 1,000 miles, but the breakeven point where it makes sense to convert from over-the-road truck to rail is now in the 550-mile range despite the narrowing gap in rail and truck rates. In 2008, domestic intermodal volumes actually rose 2.9 percent, the best growth rate since 2004, while international volume was down 11 percent. Much of the domestic gain over the past year has been in the shorter lengths of haul. Growth in lanes of less than 1,000 miles was almost 7 percent through the first three quarters of 2008, more than twice the growth rate in lanes greater than 1,000 miles. More than 60 percent of total domestic growth was in the shorter-haul lanes."[10]

7.2 Port Diversification

Sourcing patterns have traditionally favored U.S. West Coast ports. But after September 11, 2001, shippers began adopting port diversification strategies to reduce the risk of business disruptions that could result from unforeseen and uncontrollable events such as terrorist attacks, waterfront labor slowdowns and work stoppages, and port and infrastructure congestion and delays in places like Southern California. In the past decade, shippers have shifted cargo from the ports of Los Angeles and Long Beach to the East Coast, Gulf Coast, Pacific Northwest, western Mexico, and British Columbia. The main reasons are because of congestion at Los Angeles-Long Beach, and those ports' unpopular increase in container fees to fund improvement projects. "It is estimated that approximately 50% of the cargo entering the ports of Los Angeles and Long Beach is discretionary, meaning it is not intended to be sold in the local market, and could therefore, reach its destination via another gateway."[11]

Industry experts anticipate port diversification will continue as shippers now better understand the risks inherent in concentrating too much cargo in a limited number of gateways. This bodes well over the long term for Pacific Northwest ports. Over time, it is likely that ports of Portland, Tacoma and Seattle's containerized volume will increase incrementally due to the port diversification strategies employed by importers. If needed roadway and rail improvements are made, Clark County could take advantage of port diversification by becoming a desired area for distribution centers. Improving landside freight mobility in Clark County will also benefit Oregon and Southern Washington shippers who move cargo to and from ports in the Puget Sound.

7.3 Decentralization of Distribution Centers

Many companies, particularly big box retailers, have shifted to using actual sales data and demand forecasts to determine how much and what product to pull into stores at a given time. In order for "pull" supply chains to function well, the point of distribution needs to be as close to the consumer as possible to enable rapid replenishment. This has led to a trend toward:

1. Using smaller regional distribution centers that can feed stores within about a 500 mile radius or one-to-two-day truck trip

2. Distribution outsourcing to third-party logistics warehouses

3. Direct-ship from the foreign port to the customer's distribution center or store to bypass importer distribution centers

4. Transloading and immediately transferring product from inbound ocean containers to domestic 53-foot rail and truck containers for the movement to inland points

"More companies are establishing regional distribution centers as opposed to having one or two national distribution centers, enabling the importer to delay the final delivery decision to direct cargo to the right stores to meet customer demand, since the regional facility is closer to the customer. Often importers will use a four-corner distribution center strategy, positioning facilities in the Pacific Northwest, Southern California, the Northeast, and Southeast.

Companies in the past decade have shifted more responsibility for warehousing portions or all of their inventories to third-party logistics warehouse operators, generally located near port gateways or intermodal transfer hubs like Chicago, so that they will not have as much capital tied up in their own buildings and to enable cargo handling costs to be variable rather than fixed. This also allows the company to respond easier to changes in customer demand, particularly when there are shifts in sales volume or geographic dispersion, because the company does not have to shut down an existing distribution center or build or lease another in a different location. It is likely that companies will continue to employ a decentralized distribution center strategy in the coming years. This means that some importers might find Clark County an attractive place to locate their Pacific Northwest facilities.

The criteria companies use to select sites for new distribution centers include low land, labor, and utility costs; skilled workforce; and transportation system accessibility. Another major issue is that the local government allows 24-hour-per-day, 7-days-per-week operations. Nighttime and/or weekend operations allow companies to avoid congestion. Some jurisdictions limit operations because of noise concerns."[12] When developing policies and strategies, the Regional Transportation Council and its partners should consider these criteria. Several communities in King, Pierce, and Thurston County want to limit distribution centers, which creates an opportunity for Clark County. It is critical that Clark County plan properly to reduce the community impacts by improving the transportation system, developing key freight routes, and ensuring proper zoning.

The direct-ship to customer trend bypasses importer distribution centers. With direct-ship, the container is shipped directly from the foreign port to the customer's distribution center or store. Importers reduce transportation costs. Most of these move through major port gateways; therefore this trend is not likely to affect Clark County.

Similarly, the ten-year-old trend of big box retailers transloading and immediately transferring product from inbound ocean containers to domestic 53-foot rail and truck containers for the remainder of the movement to U.S. inland points is not likely to affect Clark County. Although the transloading trend will continue because the practice dramatically lowers the per-unit cost for inland transportation, Clark County is not likely to benefit. In order to minimize overall transit time, shippers usually choose to transload primarily near large ports that ocean carriers have designated as first ports-of-call. While there is an opportunity for Clark County to entice third-party logistics warehouse operators to establish transload facilities in the region, the lack of first port-of-call service at the Port of Portland could be an issue for shippers.

7.4 Growth in Internet Sales

The explosion in Internet sales in the U.S. in recent years has led to an increase in shipments that are fulfilled through the networks of UPS and FedEx (known in the industry as integrators), rather than shipped by an importer or retailer from its distribution center to a retail outlet for purchase by the consumer via full truckload or less-than truckload truck. This trend is expected to continue and will likely mean more integrator trucks on Clark County roads and highways.

7.5 Near-Sourcing

Despite established relationships with Chinese suppliers who can provide the necessary quality and scale of products in a timely manner, a limited number of companies may move production closer to the U.S. The escalation in China's labor rates in coastal cities, the U.S. recession's impact on consumer demand, and the higher price of fuel may cause some shippers to shift some production to Mexico and the Caribbean, particularly for products that have erratic demand. Production in the U.S. is less likely because of the lack of domestic suppliers. This trend many be counter-balanced by the increase in manufacturing opportunities in China's interior as it develops its inland road, rail and barge network. It is unlikely that near-sourcing strategies will have much, if any, impact on Clark County.

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