Breaking the Logjam: How a Public-Private Partnership Aims to End Long Truck Queues at Marine Terminal Gates



Port Logistics Group

The San Pedro Bay ports of Los Angeles and Long Beach comprise the largest and busiest port complex in the United States. Approximately 45 percent of the nation's imports pass through these two gateways on their way to stores, warehouses and distribution centers across the country. The area surrounding the ports, known collectively as Gateway Cities, has the nation's highest concentration of freight trains, rail yards, warehouses and logistics centers. And since about 85% of all containers coming into the ports depart via drayage trucks, the I-710 access artery serving the ports is one of the most heavily traveled and congested freeways in the U.S.

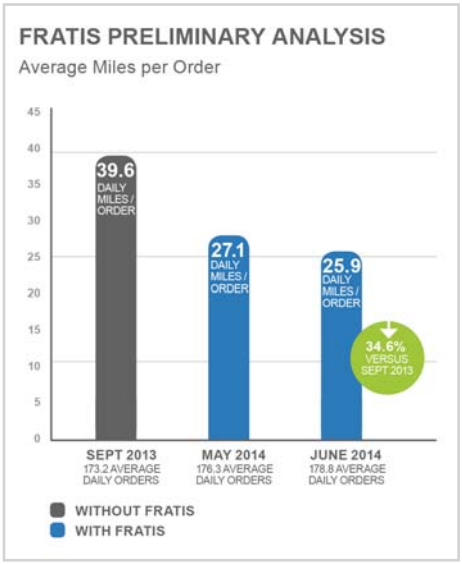
As challenging as the situation is today for this area, it could get much worse. Numerous studies by the Gateway Cities Council of Governments, federal and state agencies and private stakeholders, project that container volume through the Los Angeles and Long Beach ports will more than triple between now and 2035, soaring from an annual throughput of 14 million TEUs to 43 million TEUs. The number of trucks daily traversing the I-710 corridor could increase from 25,000 today to as many as 95,000 by 2035.

The good news? The transportation challenges facing this critically important area are the subject of intense study and expert analysis from both the public and private sectors. Dedicated groups within a number of organizations are working collaboratively and on many fronts to find innovative solutions that will support port growth while improving productivity, mobility, air quality, and public health.

One such effort, a public-private partnership known as Freight Advanced Traveler Information System (FRATIS) of Los Angeles, recently launched a major DOT-funded demonstration project, following years of study and research.

FRATIS is designed to reduce the amount of time that trucks spend waiting to get into marine terminal yards by enabling the drayage company and marine terminal to exchange information in advance. "If you visit the ports today, you can see trucks lined up and sitting at terminal gates for hours on end," says Susan De Santis, project manager for the Los Angeles FRATIS project. These trucks typically keep their engines idling while waiting, she says, "which impacts the region's air quality."

Concerns about air quality and overall congestion on I-710 are they key reasons that The Gateway Cities



Council of Governments became a sponsor of FRATIS, De Santis says. Other organizational sponsors include the Los Angeles County Metropolitan Transportation Authority and Harbor Trucking Associations, along with DOT. Technology and consulting partners include Cambridge Systematics, the Washington State Transportation Research Center, NAVIS, TomTom Telematics, TransCore, Loadmatch, EIGER TechSystems and Productivity Apex.

No partner is more central to the success of this project, however, than the two companies that have volunteered to be its "guinea pigs": Port Logistics Group, a leading provider of logistics and drayage services at major U.S. ports, and Yusen Terminals, a subsidiary of NYK Line that handles 1,400 containers a week at the Port of Los Angeles.

"Yusen Terminals has been a leader in recognizing the need to relieve congestion at terminal gates and was willing to think outside the box when it comes to solutions," says Mike Johnson, director of intermodal operations for Port Logistics Group. Johnson, who also is president of the Harbor Trucking Association, championed this project from the beginning and played a key role in propelling it forward.

Frustrated by the extended wait times that drayage companies had long experienced at the ports and by the lack of movement toward remedies, Johnson convinced the Harbor Trucking Association in October 2012 to begin an ongoing collection of truck mobility data. Using a sampling of 1,600 trucks, this initiative measures on an ongoing basis the time it takes for a truck to get into a terminal, pick up a trailer and exit. After being reviewed by an independent third party, the data is then published on the HTA website.

In May 2013, after 8 months of data collection, the HTA was able to show that 20 percent of all truck moves into and out of the San Pedro Bay ports take more than two hours. "We believe, based on volume, that an hour is an acceptable amount of time for a truck to enter a terminal, find a container and exit," Johnson says. "Two hours is not acceptable and four hours is absolutely unacceptable. Anything exceeding four hours is clearly unsustainable for all the stakeholders – carriers, customers, terminals, and the residents and businesses in the Gateway Cities."

The HTA's Truck Mobility Data not only helped persuade stakeholders to support the FRATIS demonstration project, it actually provided some of the algorithms being used in the FRATIS technology. It also helped start a dialog, which has been further advanced by FRATIS, that is closing the gap between how marine terminal operators and truckers view terminal wait times.

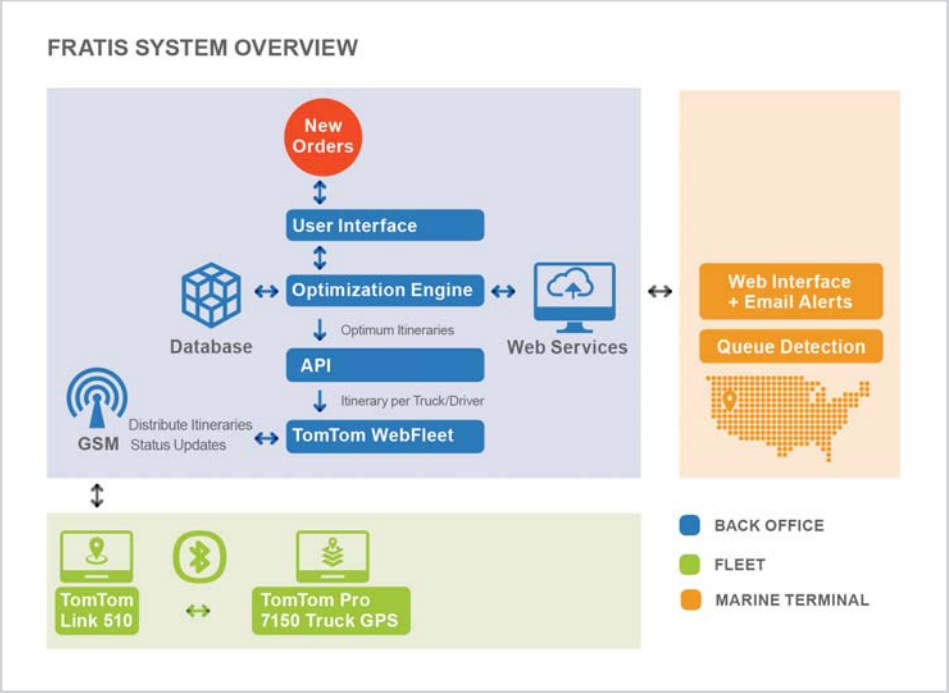
On the marine terminal side, a truck's arrival time is recorded as time it checks-in at the gate, but truckers start the clock as soon as they get in the gate's queue. "Of all the issues resulting from gate congestion, maybe the worst is how it affects labor," says Johnson. "Most of the drivers going into and out of these terminals are owner operators, and when they are waiting in line they aren't getting paid."

The theory behind FRATIS is that a better exchange of information between the marine terminal and the drayage company about a container's availability and a truck's arrival will significantly reduce wait times.

Under the demonstration project, when Port Logistics Group enters a container pickup order into its system, the information is automatically fed into the FRATIS software. An electronic message is then sent to Yusen Marine Terminal that identifies the truck that will pick up this specific container when it is available. Yusen agrees to push back information to PLG on the container's status.

Pushing back the availability information is "groundbreaking" and "has never happened before," says Johnson. He explains that, although marine terminals generally operate 24 hours a day, they are not open to truck traffic for 24 hours. "Trucking companies get container updates during the night and the next morning someone has to spend a lot of time going through these before trucks can be dispatched," he says. "The beauty of FRATIS is that we can see immediately which containers are available for pickup."

Once a container is tagged as available, the software assigns the pickup to a driver, using an optimization tool that considers driver location and status. "Sending the information electronically makes it much easier for the dispatcher and the driver, because there are no phone calls involved," Johnson says.



After an order is accepted by the driver, the FRATIS system's dynamic routing kicks in, which is based on Webfleet, a GPS-based vehicle tracking system from TomTom Telematics. It dynamically routes the truck from wherever it is to its destination. Using FRATIS infrastructure that collects local traffic information, the system suggests alternate routes around any incidents that could cause a delay. "The combination of dynamic routing and real-time traffic information is a huge advantage for everybody concerned because it saves time, fuel and emissions," says Johnson.

As the driver is being routed, the system also sends a message to the marine terminal with the truck's ETA. "Under the test model we have set up with Yusen, our trucks are assigned a special gate that is like an express lane," Johnson says. Yusen is able to provide this service because the pre-notification allows it to do all the transaction work in advance. "Generally the marine terminal has no clue why a truck is there until it reaches the gate and provides the information," says Johnson. "Pre-notification and the infrastructure built into the FRATIS system could revolutionize the way business is conducted at marine terminals."

The FRATIS demonstration project will continue for several more months, but results to date are very encouraging. "This limited demonstration will test the concept and help us improve the software," says De Santis. "After the test run is completed early next year, our intent is to be able to scale it up and add more terminals and more trucking companies. Conversations already are underway with potential participants for the project's next phase."

If successful, FRATIS also could be expanded to other ports around the country, many of which handle less volume than the San Pedro Bay ports, but also have less surrounding infrastructure. Oakland and New York/New Jersey are two examples of ports that could be prime candidates for FRATIS adoption, Johnson says. "The implications of this demonstration project certainly are not limited to this region," he says.

"Port Logistics Group is proud to be participating in the FRATIS demonstration project and excited to be on the forefront of this technology," says Johnson. "We believe the port authorities, marine terminals and trucking companies that are early adopters of this technology will clearly have a competitive advantage."



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