

OnTrac Trade Impact Study:

National Economic Significance of Rail Capacity and Homeland Security on the Alameda Corridor East

Executive Summary
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Preface

The research described in this report was commissioned and published in cooperation with the Orange North-American Trade Rail Access Corridor (OnTrac) Joint Powers Authority. The Los Angeles County Economic Development Corporation (LAEDC) Consulting Practice led the research team during the last year and used the external services of Webley and Associates and Advantage SSI for peer review of the homeland security portions of the study. Dr. Nancy Sidhu reviewed the economics analysis in the study. RAND's Public Safety and Justice Program under subcontract to LAEDC conducted a portion of the research. This document has not been subjected to RAND's research quality assurance process.

The studies major findings are as follows:

(1) The Department of Defense has designated the rail lines out of Southern California as strategically important national assets. These rail lines ensure that the U.S. military forces have the ability to mobilize heavy equipment, such as tanks and tracked vehicles.

(2) Terrorism is real and not theoretical on strategic rail corridors with passenger and freight rail service.

(3) Terrorism experts believe that Al Qaeda's apparent interest in rail attacks should be cause for concern.

(4) Protecting all 143,000 miles of rail lines in the U.S. is impractical. Focusing on rail corridors of national security and economic significance like the Alameda Corridor East is logical because of its importance to the U.S. economy.

(5) Southern California has become the nation's primary gateway for two-way international trade. Local efforts to deter and respond to terrorist attacks along the Alameda Corridor East should be a serious effort by communities. If local communities are part of the overall security system of the country then they must benefit from homeland security measures too.

(6) The Alameda Corridor East moved about \$116 billion in goods based on the manufacturer's value, in 2000. The street value was much higher for the same products. The street value or "purchaser value" of rail cargo traveling on the Alameda Corridor East in 2000 was \$166 billion.

(7) The study results also show that a 10-day shutdown of the Alameda Corridor East, as a result of an attack, would have a similar impact on the U.S. economy as the West Coast ports shutdown did last October.

(8) The disruption cost of shutting down the Alameda Corridor East, as a result of a terrorist attack, is \$414 million each day that it is shut down. A 10-day disruption would therefore be \$4.1 billion. An attack with of a 30-day duration would see a \$12.4 billion disruption cost and would rise to \$24.8 billion if the shut down of the strategic corridor lasts for 60-days. This study also states that the disruption value estimates are very conservative and understated.

(9) Another conclusion of this study is that there would be little relief to the congestion of goods movement after a terrorist attack because all other options for moving goods offer only limited results to relieving the congestion after an attack. There is little room at the margins to work around a serious interruption of the Alameda Corridor East.

(10) The study team found that it is entirely logical to compare allocations of the Homeland Security Act funds with the need to improve security of strategic rail corridors and infrastructure.

(11) Increasing capacity of rail moves more military goods, faster, but at the same time added capacity increases the wait times for drivers at street level rail crossings. Upgrading strategic rail lines with overpasses and underpasses will allow increases to capacity and keep the community on a thoughtful growth plan of our critical corridors. By 2025 there will be one train every 8 minutes, 24 hours a day, 7 days a week on the Alameda Corridor East if trade flows grow as expected. Railroads pay for 5-10% of the cost according to Federal or State law.

(12) The U.S Treasury collects 45% of all U.S. Customs revenue on products that go through the ports and corridors of Southern California each year. None of that revenue is used to reinvest in the country's trade corridor system, homeland security for rail corridors, or intermodal connectors. In fact it isn't used for trade related infrastructure at all. This study recommends that 30% of Customs revenue be dedicated each year to strategic rail corridors across the country to solve the problem quickly and nationally.

(13) Strategic rail is the only growth alternative for many cities like Los Angeles, Chicago, New York, Las Vegas and Houston. Supporting more trucks is fightin' words in these cities. Corridors between these cities should become part of the Federal, State and local institutions funding cycles like highways and transit systems.

(14) The LAEDC would not be surprised if a ballot initiative is developed at some point to completely ban trucks (18-wheelers) during certain times of the day or on certain freeways as a solution to reducing the crippling impact of truck pollution in local communities. Also it is that likely that the Clean Air Act will trump

interstate commerce rules, railroad law, increased international trade demand, and the goods movement, including DoD and government goods, on highways in major metropolitan areas.

(15) The study also suggests that an updated threat assessment is a good idea in communities to determine what the most likely threat will be. A community can't defend against everything but they can identify potential targets and rank those like a terrorist would. Launching an awareness campaign to help educate the community is also suggested along with many other local action ideas.

(16) Communities along the Alameda Corridor East need to mirror or adopt the security measures and mindset that the federal government has had for years in its effort to protect national security and, on a smaller scale, use it as a roadmap for strategic infrastructure protection. Most cities in Orange County have a disaster or emergency preparedness plan. But for those who may not, then a homeland security plan is needed.

Summary

Executive Order EO 13010, Critical Infrastructure Protection, says, “certain national infrastructures are so vital that their incapacity or destruction would have a debilitating impact on the defense or economic security of the United States. The study finds that it is essential for the government and private sector work together to develop a strategy for protecting them and assuring their continued operation.

Researchers and experts in preparing this study focused on the transportation infrastructure, specifically on the dynamic connections between the economy, homeland security, trade corridors, and freight rail through the prism of Southern California’s freight rail network.

Additional capacity and homeland security on strategic corridors

The threat of terrorism to our transportation infrastructure is real and

not theoretical. Terrorism experts believe that Al Qaeda's apparent interest in rail attacks should be cause for concern. Since 1998, there have been 90 attacks on trains and rail networks overseas, and a handful in the United States. Most rail attacks appear to be aimed at passenger, rather than freight rail. The Alameda Corridor East is both an international and domestic freight rail line and Amtrak and a passenger commuter rail service also shares the same tracks.

At the same time, protecting every rail line is a daunting task because there are 143,361 miles of rigid, immovable track, across the United States. It is impractical to secure every rail line in every community. A focus on nationally significant trade corridors with shared passenger rail should be the first step in keeping the strategic parts of the system secure.

While rail demand is "growing simultaneously more robust it is also becoming more fragile." More than one-third of total U.S. waterborne container traffic moves through Southern California's two ports and trade corridors creating fragility concerns as industry continues to build its capacity around just-in-time manufacturing and logistics.

Factors such as congestion, labor disputes, storms and accidents now place heavy demands on the freight rail system. These facts make the Alameda Corridor East and its subsidiaries vital links to U.S. consumer and producer markets – vital links, which if disrupted by terrorist attack or other environmental or operational crisis, could have a detrimental impact on a significant percentage of the nation's goods as well as the national economy.

The Alameda Corridor East rail lines are also a vital component of national security. The Alameda Corridor East consists of the Burlington Northern Santa Fe Railway (BNSF) mainline through Los Angeles County, northern Orange County, Riverside and San Bernardino Counties and the Union Pacific (UP) Railway mainline, which traverses the San Gabriel Valley, San Bernardino, and Riverside Counties. The following map shows the overall Los

Angeles regions train traffic on rail corridors and the daily rail forecasts out to 2025:

Alameda Corridor East Daily Rail Forecast

Alameda Corridor Daily Rail Traffic			
YEAR	2003	2010	2025
Passenger	0	0	0
Freight	35	67	137
Total	35	67	137

UP Mainlines Daily Rail Traffic			
YEAR	2003	2010	2025
Passenger	14	26	44
Freight	55	78	117
Total	69	104	161

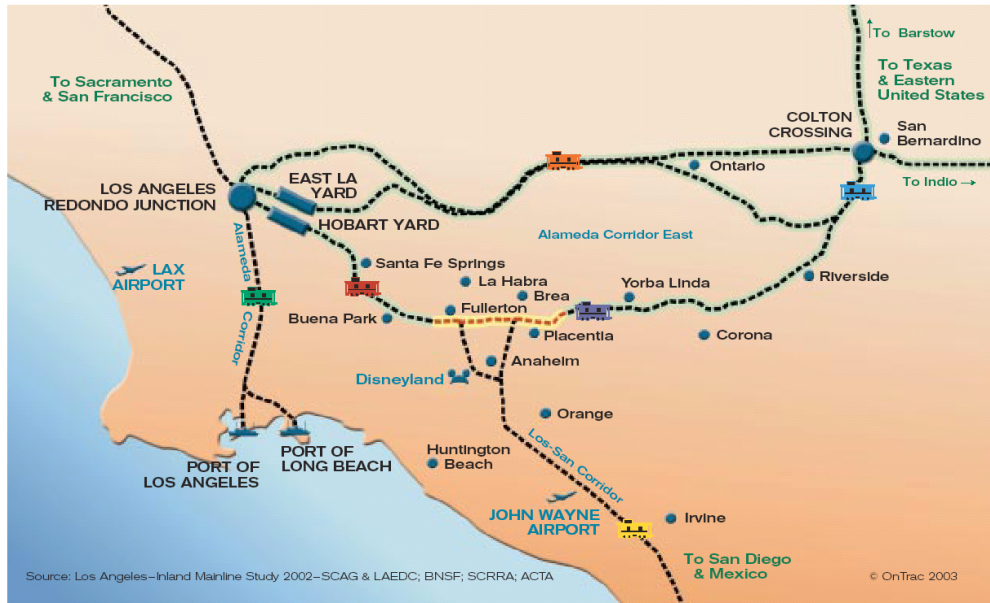
BNSF Mainline West Daily Rail Traffic			
YEAR	2003	2010	2025
Passenger	46	76	106
Freight	50	74	112
Total	96	150	218

BNSF Mainline East Daily Rail Traffic			
YEAR	2003	2010	2025
Passenger	17	38	62
Freight	57	82	121
Total	74	120	183

Los-San Corridor Daily Rail Traffic			
YEAR	2003	2010	2025
Passenger	55	69	100
Freight	5	6	9
Total	60	75	109

Joint UP & BNSF Daily Rail Traffic			
YEAR	2003	2010	2025
Passenger	11	24	36
Freight	92	96	138
Total	103	120	174

Alameda Corridor East: 
 OnTrac Project: 



Overall about 140 trains travel the Alameda Corridor East trade corridor each day. Included in that total are 70 passenger and freight

trains that travel through the Orangethorpe Corridor linking the Los Angeles's ports to Asian, and US Midwest and East Coast markets as well as meeting US Department of Defense (DoD) requirements. The Los Angeles basin has about 5 years of strategic rail capacity before it can grow no more according to a mainline rail study.

The DoD has designated more than 38,000 miles of rail lines – including those out of Southern California – as strategically important national assets. These strategic rail corridors help connect military installations to ports and intermodal transfer facilities and to ensure that US military forces have the ability to mobilize heavy equipment, such as tanks and tracked vehicles, as needed. In some cases, DoD will use public funds to maintain a rail line. DoD will also assess the possible impact of proposed mergers on rail lines and military needs. Southern California has very busy rail corridors with little capacity to spare.

In the Los Angeles area, Los Angeles and Orange Counties have created Terrorism Early Warning Groups (TEWG), which are informal coalitions comprised of law enforcement, intelligence, and business, legal and consultative personnel. If communities are a part of the system then they must be part of the solution to homeland security. One of the many conclusions of this study is that effective partnerships are critical between government, the private sector, and the community to deliver the appropriate response with the public sector.

The remaining sections of security portion of the study addresses Southern California's freight infrastructure, including the ports, rail infrastructure, cargo containers, and strategic freight and passenger rail corridors connecting the nation's three largest cities – Los Angeles, Chicago and New York City – through more than 3000 miles of track. The Port of Los Angeles and Long Beach and both railroads have met the high threshold of homeland security challenges so far according to RAND researchers. Rail threats, vulnerabilities, and many security issues are also addressed in detail in this section of the report. Security priorities and specific solutions

are also discussed in checklist format and some innovative technologies are explained in an accessible way.

Economic Impacts of a Terrorist Attack on Alameda Corridor East

The Counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego, Riverside and Imperial together are home to approximately 20 million people. The annual household spending in the region is approaching \$300 billion making it one of the largest consumer markets anywhere.

The region's many businesses – which include one of the two largest manufacturing centers in the nation – purchase billions of dollars in inputs from suppliers across the nation. Southern California is also a large originator and consumer of domestically produced goods.

Last year, the 10-day shutdown of the West Coast ports due to a labor dispute in October 2002 was an unpleasant reminder of just how dependent the local, regional, and national economies are on the timely movement of goods through the regions corridors.

The Alameda Corridor East carries considerably more rail traffic than its namesake, the Alameda Corridor. That's because the Alameda Corridor carries *only* international freight from the ports. Alameda Corridor East, in contrast, carries all of the same international freight that reaches it via the Alameda Corridor, *as well as* the port cargo that is loaded at the intermodal rail yards after being hauled up from the ports by truck. In addition, domestic freight, which does not use the Alameda Corridor at all, is loaded and unloaded at the intermodal yards just beyond downtown Los Angeles. Finally, Amtrak passenger and Metrolink commuter trains also share the same tracks with freight trains through this eastbound corridor.

The scale of this domestic trade in year 2000 was \$293.6 billion. This fact reveals that domestic trade between California and the rest of the United States was \$337 billion in the same year.

The outbound domestic trade alone breaks down by state at \$254.4 billion shipped from California to the rest of the U.S. (Note that researchers did not include the \$534 billion in internal California trade, nor does it include the \$92 billion in California international trade that arrived at or departed from the Ports of Los Angeles and Long Beach.) Further note that dollar values used for domestic trade are “producer prices” meaning that they reflect the price at which goods are sold by the manufacturer and not the price of the retailer.

Producer value of rail cargo traveling via the Alameda Corridor East was \$116.4 in 2000 and \$74.0 billion dollars of domestically and internationally produced goods moved via the Union Pacific and Burlington Northern Santa Fe lines of Alameda Corridor East on their way to destinations around the country. The *purchaser value* of rail cargo on the Alameda Corridor East was equal to \$165 billion in the same year. This conservative approach suggests the estimates used in this study are most likely low.

The balance of the economic impact section of the study focuses on the consequences of an attack that seriously damages or destroys critical parts of Alameda Corridor East and how researchers calculated the impacts and value of goods traveling by rail. We do not attempt to estimate the probability or likelihood of such an attack, but rather use the potential event to illustrate the consequences associated with such an attack.

The bottom line is that the total potential disruption cost of a terrorist attack on the Alameda Corridor East is \$4.1 billion for a 10-day duration, \$12.4 billion for a 30-day incident and \$24.8 billion for a terrorism attack that disrupts the corridor for 60 days.

These estimates of the economic activity at risk if a terrorist attack were to shut down Alameda Corridor East have a few weaknesses. All of these weaknesses suggest that the \$414 million per day of economic activity at risk is a *serious understatement of the overall risk to the U.S. economy*. The actual losses could be *far, far* higher if the freight flows were interrupted for long enough.

Consider the massive power blackout in the Northeast, which

occurred last month. This crisis highlights the crucial distinction between the economic value associated with the use or cost of a commodity, and the potential loss created by its absence. The customers in the impact zone will probably not notice the drop in value of the electricity on this month's electric bills due to the power being cut off for those few hours but the cost to the U.S. economy will another story.

Federal Funding of Mega Projects and Strategic Rail Corridors

The recently enacted Homeland Security Act (HSA) and ministerial actions have started the allocation process for federal funds authorized under the Act. While there have been some preliminary reports concerning the allocation of these funds, there is a need for a comprehensive and thorough analysis of not only how such funds are being allocated but how they are being invested by the Federal government.

It is entirely logical to evaluate any allocation of Homeland Security Act funds, at least in part, on the basis of data generated by the OnTrac study. This is because funding rail projects like the Alameda Corridor East (OnTrac Corridor) have unique national security benefits and huge negative impacts on local communities. On one hand, additional capacity improves the rapid movement of DoD goods but on the other hand it also increases the idling time that drivers experience at ground level rail crossings. By 2025 there will be one train every 8 minutes, 24 hours a day, 7 days a week, along the Alameda Corridor East.

If the HSA is not an adequate source then other funding solutions should be considered. They include Customs revenue, container fees, a fee collected by U.S. Customs on all goods coming into the country, a pollution credit/toll/bond on goods movement or all of the above. The customs revenue stream seems to make the most sense and would not be a tax increase. After all, each year the US Treasury collects about 45% of all Customs revenue on products that go through Southern California. Yet none of these revenues are used to reinvest in the trade corridor system, homeland security for rail corridors or intermodal connectors.

Also, strategic rail corridors are *not* an institutionalized part of the Federal or State transportation funding cycles like highways and transit projects. Economically, this is a weak strategy for the country and is not in the interest of our national defense or homeland security. Strategic rail is the *only* growth alternative for many other large cities like New York, Chicago, New York, Las Vegas and Houston. More trucks are fighting words to communities in these cities. Also, going forward, no new highways are ever going to be built in Southern California while the truck traffic keeps

growing in leaps and bounds. An estimated thirty percent of annual Customs revenue collections should cover all the needs of the United States strategic rail corridors over the next twenty years.

LAEDC also believes that down the road the Clean Air Act has the power to ultimately trump the interstate commerce laws, railroad exemptions, and international trade going through our seaports and local communities, and the movement of DoD goods. Surprisingly, there has been talk by local community leaders of stopping the growth of the Los Angeles and Long Beach Ports to reduce the demand and therefore the local impact of trucks. Even though this won't work, it would probably be unacceptable to the DoD for obvious reasons. So researchers at the LAEDC believe that their idea of "clean freight"™ or "renewable freight"™ is the coming of age for the strategic rail system and the Federal government should get on board -- no pun intended.

The primary goal of this study was to determine if the OnTrac rail project in Placentia, California is a project of national security and economic significance. An additional objective was to also determine the threat and economic impact of terrorism to the Southern California east/west bound rail trade corridor system including the OnTrac rail project.

The findings indicated the threat of terrorism is a reality. The national security and economic impact of a terrorist attack or system disruption would be significant not just to California but the rest of the nation. The Alameda Corridor East and OnTrac are projects of national security and economic significance.