

MTP2030 Issue Papers: Freight Movement



This paper will begin to lay out the issues related to the movement of goods – or freight – facing our region over the next 25 years. It will attempt to answer a few key questions about the movement of goods to, from, and within our region, why we should be concerned about it, and what SACOG can and cannot do in this area.

Typically, the government role in freight transportation has been to provide infrastructure (roads, highways, airports, and seaports) and make laws or policy decisions (designate truck routes, mandate cleaner diesel engines, restrict delivery hours, etc.). In general, the private sector has had the responsibility to construct much of the freight-related transportation infrastructure, such as railroads, intermodal facilities, warehouses, and distribution centers. The private sector decides how shipments flow, and owns and operates the vehicles moving the goods on the system.

Freight in the Region

With nearly two million people, the Sacramento area is a major consumer of goods. However, the only sizeable local product is agriculture (i.e., fresh and processed food products).

- Trucks: Both I-5 and I-80 currently carry about 2,500 through-truck trips per day through Sacramento. A far more significant proportion of truck traffic has either an origin or destination here or is operating within the region.
- Rail: The region has two Class 1 railroads – Union Pacific (UP) and Burlington Northern Santa Fe (BNSF)-- and two short line railroads – Sierra Northern Railway and California Northern Railroad. The Union Pacific Railroad provides the majority of rail service to the region and has a significant railyard in Roseville. It tends to view passenger rail service as “getting in the way” of freight service.
- Port: The Port of Sacramento is served by about one ship every three weeks. At this level of activity, the port loses almost \$1,000,000 every six months.
- Air Cargo: Mather Field has been designated as the region’s air cargo facility. However, Sacramento International Airport moves a considerable amount of air cargo via FedEx in the cargo holds of regularly scheduled passenger flights. Both facilities have substantial capacity for expanding service, although full operations at both airports are threatened by the encroachment of residential housing.

Economic Drivers behind Freight Shipping

- The manufacturing of many consumer goods has now been outsourced to companies in Asia, Mexico, as well as other U.S. states.
- The emergence of this trend is a result of a steady decline in transportation costs relative to manufacturing labor costs.

- The production and distribution of most goods now utilize “just-in-time” (manufacturing) delivery. Instead of keeping a large supply of product in a warehouse, goods are manufactured and shipped only as replacements are needed.
- As advances in technology have taken place, transportation costs have been reduced while reliability of delivery has improved. This has provided greater flexibility in locating facilities for manufacturers.
- Railroads are competitive with trucks only if hauling goods for more than 500 miles (the railroads prefer 1,000 mile hauls).
- California industries produce a relatively high volume of goods with high value-to-weight ratios and are most commonly transported by air.

Constraints and Opportunities for this Region

Trucks

Interstate 5 is considered the “backbone” of the state’s highway system, providing a link between the Central Valley and the nation’s largest international gateway to trade – the ports of Los Angeles and Long Beach. It is also the West Coast’s only north-south thoroughfare, linking Seattle with Los Angeles. Interstate 80 provides the main corridor for goods movement between the Bay Area, Sacramento, and areas east of the Sierra.

This region’s highways were primarily constructed in a radial pattern: to connect the central city to the suburbs. In the absence of a network of inter-suburban highways, more and more truck traffic is being moved onto arterials. This has become even more pronounced as manufacturing, warehousing, and distribution centers move to the suburbs, and as new developments appear in areas with limited highway or freeway access and no rail access.

With the passage of TEA-21 in 1997, Congress authorized a 10% increase in allowable truck weights (from 72,000 to 80,000 pounds) which has led to a 25% increase in road wear by those trucks. Unfortunately, however, there was no corresponding increase in funding for road maintenance. While most state highways have been able to hold up to the increased truck weights, many rural roads and suburban arterials – especially those built to older standards – have significantly deteriorated.

Railroads

While there are ample economic and environmental incentives for shifting more freight from trucks to trains, there are several factors that will act against this:

- Similar to how vehicle miles traveled have increased dramatically, the number of highway lane miles has remained about the same, freight train miles have also increased significantly while track miles have stayed about the same.
- Freight train miles are forecast to double by 2020 and double again by 2036.

Railroads are now faced with three choices:

- Lay more track
- Change operating practices and schedules
- Drop the least profitable business

Capital expenditures for railroads make up a larger percentage of revenues than virtually any other business (currently about 17%). It costs about \$3.5 million to construct one mile of main line railroad track and about \$466,000 annually to maintain it. On the other hand, if fuel costs continue to rise, rail transportation may become more economically advantageous.

Port

The Port of Sacramento serves a relatively small niche market for bulk (i.e., non-containerized) cargos, faces strong competition from the port of Stockton, and will require significant investments to its infrastructure to compete. A proposal by the Port of Oakland to operate the port here would likely generate new business and provide additional expertise to the management of the port. Key investments that will be required to ensure that the port remains economically viable include:

- Dredging of the shipping channel from a depth of 30 to 35 feet - \$50-70 million
- Improvements to Harbor Boulevard - \$33 million (approximately \$13 million funded)
- Rail relocation - \$27-41 million
- Marine terminal facilities - \$20 million
- Approximate Total - \$130-164 million
- Other nearby ports (with the exception of Redwood City) all have greater channel depths (35 - 38 feet).

Strengths:

- The port is in close proximity to the greater Sacramento Valley cargo market.
- It has a strategic location near I-5 and I-80.
- It is served by the Union Pacific Railroad and the Sierra Northern Railway (Yolo Short Line).
- It has an inland location outside the Bay Area's congestion.

Weaknesses:

- This area comprises a relatively small local market for heavy bulk goods.
- There are multiple nearby competitors.
- The Port is in an upriver navigation location with a shallow channel.
- The Port faces significant financial issues and has a lack of business diversity.
- A major threat to the Port is the encroaching residential development.

Airports

Air cargo has been forecast to increase 5.4% a year through 2020, compared to 4.1% a year for air passenger traffic. By 2025, the volume of international air cargo is expected to double or even triple statewide.

In 2004, 98.8% of the state's airborne imports, and 93.2% of the airborne exports, went through Los Angeles International Airport or San Francisco International Airport. Extremely congested highway networks serve both of these airports and both are seriously constrained in their ability to expand further. Taken together, these factors would tend to favor moving air cargo operations to less congested areas, such as Sacramento.

Airport officials here have designated Mather Field as the region's air cargo hub. This move has not been entirely successful in shifting the focus of the region's air cargo operations primarily to Mather, as a great deal of air cargo still moves in and out of Sacramento International Airport, and Federal Express has refused to move to Mather. This is not entirely unusual, since a large volume of international air cargo is moved in the cargo holds of passenger jets. However, upcoming changes in security regulations could restrict this practice.

Sacramento International Airport is currently the only airport in the Central Valley that offers international flights and is the only one likely to see a significant increase in the number of them offered. Studies have shown that there is already sufficient demand to offer daily non-stop service to London, five day a week service to Frankfurt, and at least weekly service to Asia.

Blueprint and Land Use Considerations

Freight transportation activities have the potential to both help and hinder the goals of the Blueprint process. The Blueprint seeks to mix residential and commercial land uses and provide a better jobs/housing balance. However, industrial and freight transportation-related land uses do not always adapt well to mixed-use development. Residents living near freight facilities naturally tend to complain about the traffic, noise and pollution generated there, especially if operations extend to off-peak hours. This is where goals of shifting freight operations to off-peak hours (to reduce traffic congestion) may come into conflict with policies that seek to provide a better mix of residential and employment-related land uses. Also, mixed-use development means that more delivery trucks will be operating in closer proximity to residences than would be the case in typical suburban neighborhoods.

Rising real estate values, as well as the current emphasis on infill development and a desire to redevelop older industrial sites (aided by increasingly severe traffic congestion in central cities), have encouraged many older freight facilities to sell out in favor of more profitable land uses and relocate to outlying areas – typically with no rail access. This may have the effect of making available large parcels of centrally-located land for redevelopment – another objective of the Blueprint. This may also make good business sense to move freight activities to remote locations where land values are lower and road access is less congested. While this has the advantage of freeing up land for more valuable types of infill development, the lack of rail access

and more remote locations could also result in more vehicle miles traveled by trucks overall, more emissions, and more congestion in the region.

Environmental Considerations and Impacts

The biggest freight-related concern to the citizens of this region is the impact of trucks on roads. There is a concern that there are more trucks on the roads overall and an increasing number of trucks on local streets and arterials. From a citizen/resident perspective, this increase in trucks on roads brings with it concerns about traffic, safety, noise, and air pollution. The Sacramento region may have an economic opportunity to be a freight terminal center, but that comes with the tradeoff of environmental and traffic impacts

Air Quality

The emissions from freight movement have been shown to make up 49% of the nitrogen oxides (NO_x) and 36% of the particulate matter (PM) from all mobile sources. Of these, trucks are by far the largest contributor, accounting for almost two-thirds of the total freight-related emissions. Many parked trucks also idle their engines to run air conditioners in hot weather, or refrigeration units for the load, which adds to these emissions.

Noise

As freight traffic has increased, so has the associated noise level. As the region's roadways become more congested, more trucks are moving at off-peak hours (nighttime), worsening the effects of noise. An increasing number of studies have linked high levels of noise with a variety of health problems.

Traffic

Even while total traffic volumes have been increasing, truck traffic has also seen a considerable increase. As mentioned earlier, all modes of freight transportation have seen significant growth and are forecast for even more.

Safety and Security

While safety has always been a primary importance in freight operations, given the magnitude of potential impacts from truck or rail accidents, security has become even more important since 9/11/2001. New funding through the Department of Homeland Security has now become available to address this topic, and the California Department of Transportation has a variety of funding programs to address safety deficiencies.

Truck Parking

In recent years, trucks parking at various and sundry locations has become a problem. In spite of being at the crossroads of two primary interstates, the Sacramento area is home to only one private truck stop.

Private Roles and Public Pressures

Private Sector

- The private sector has the role of manufacturing, assembling, shipping, distributing and selling goods.
- They contract with shippers who choose the mode, route, and timing for moving the goods.
- They own and operate the vehicles used to move the goods.
- The private sector pays taxes used to construct and maintain the transportation system; however, truck taxes may be too low to cover the costs.
- The private sector is driven by profitability and is responsive to changes in pricing.
- Since deregulation in the 1980s, the freight transportation has become very competitive. There are also many co-op ventures now, and profit margins tend to be thin.

Public Sector

- The public sector provides the roadways used to move the freight, and the use of the system is increasing.
- The public sector has little opportunity to influence manufacturer or shipper transportation decisions except by way of pricing or regulation.
- It can use local, state, and federal funds to make investments in the transportation system that benefit goods movement.
- Freight is not a constituency represented by elected officials, and so its influence on them is limited to business and trade associations.
- Typically, the public sector reacts to freight impacts, rather than anticipating and planning for them.
- It can initiate public-private partnerships and conduct joint-planning efforts.
- It can develop and fund intelligent transportation system projects that will help maximize the efficiency of goods movement.