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Snapshot of COVID-19 Transportation Impacts in the SCAG Region

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ABOUT SCAG

SCAG is the nation's largest metropolitan planning organization (MPO), representing six counties, 191 cities and more than 19 million residents. SCAG undertakes a variety of planning and policy initiatives to encourage a more sustainable Southern California now and in the future..

MISSION STATEMENT

To foster innovative regional solutions that improve the lives of Southern Californians through inclusive collaboration, visionary planning, regional advocacy, information sharing, and promoting best practices.

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SNAPSHOT OF COVID-19 TRANSPORTATION IMPACTS IN THE SCAG REGION

INTRODUCTION

The public response to the novel coronavirus (COVID-19) pandemic and the subsequent national, state, county, and local mandatory stay-at-home orders has significantly impacted transportation demand globally, nationally, regionally, and locally. As the largest metropolitan planning organization in the nation, the Southern California Association of Governments (SCAG) is at the forefront of transportation planning and analysis. In order to facilitate regional planning and public awareness, SCAG prepared this document to highlight impacts of the COVID-19 pandemic on transportation activities to date.

The analysis includes passenger, freight/cargo, and vehicle movement on the region's highways, roads, rail, and transit systems. The short-term impacts of COVID-19 on the SCAG region's transportation system include the following:

HIGHLIGHTS

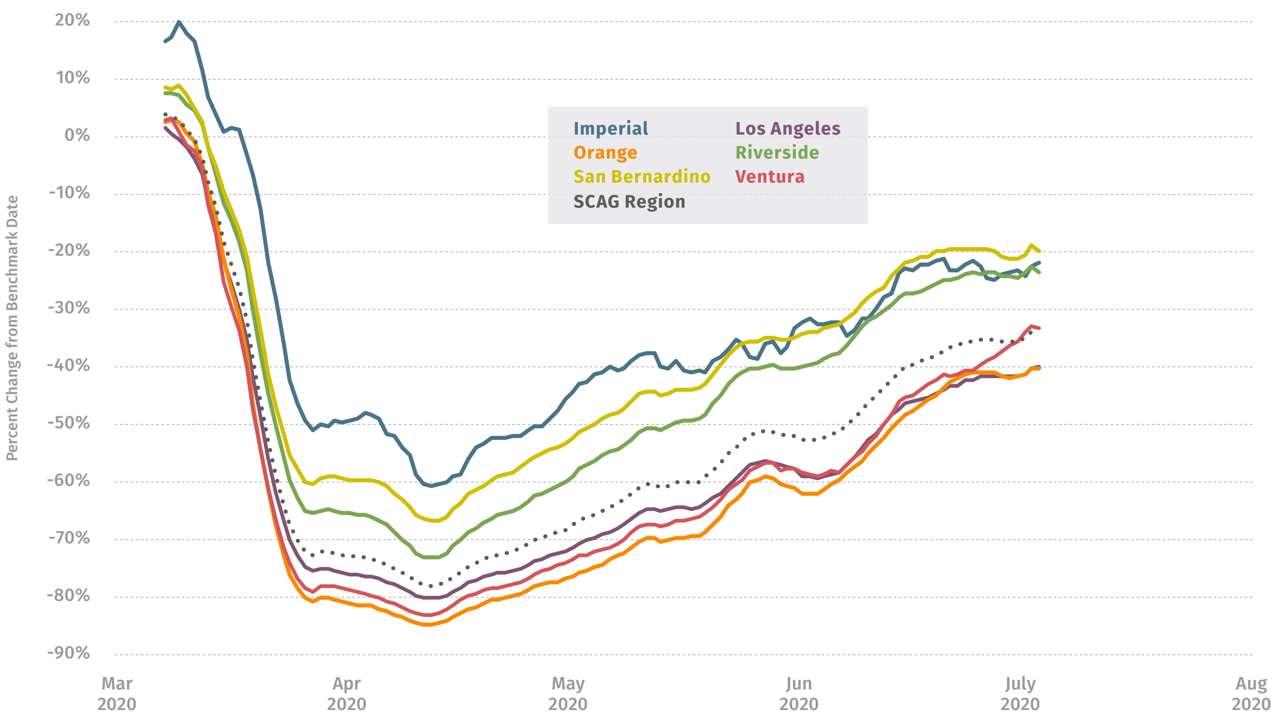
- Vehicle miles traveled (VMT) on the region's arterial and highway network declined by nearly 80 percent in early April (using January 2020 as benchmark). VMT on the freeway network alone dropped by nearly 50 percent in early April over prior year. VMT began increasing again by mid-April. Total VMT is now nearing pre-pandemic levels.
- Bus ridership is down, falling 71 percent overall in April 2020 compared to April 2019, as a result of the stay-at home-orders and as operators reduced vehicle capacity and implemented rear-door boarding to facilitate social distancing. Ridership recovered somewhat in May, but was still down 67 percent when comparing 2020 to 2019. The effects of the stay-at-home orders and social distancing measures were similar on the Metro Rail and Metrolink systems.
- Data on bicycle and pedestrian movements are limited. Trips taken on Los Angeles Metro's bike share system, however, also began to drop in March, and by June were down by 39 percent over the prior year.
- Global and domestic air travel declined by over 60 percent from March to April 2020.
- Aviation passenger demand in the region has decreased by more than 90 percent overall from last year.
- Aircraft operations have declined at a lower rate (60 percent) than passenger demand (90 percent) from the previous year.
- Air cargo has been impacted, but not to the same magnitude as air passenger activity.
- Freight has been mixed with performance down as low as 90 percent for specific sectors, but signs of improvement have surfaced.

I. VEHICLE MILES TRAVELED

VMT Decreased Sharply in Early April, Now Nearing Pre-Pandemic Levels

Following the stay-at-home orders issued in March, vehicle miles traveled (VMT) decreased to its lowest point in early April by nearly 80 percent in the SCAG region with more significant declines in Los Angeles, Orange, and Ventura counties. The figure also shows that for each of the six counties in the SCAG region, VMT began increasing again by mid-April, reflecting the gradual re-opening of some public spaces and businesses.

FIGURE 1 Percent Change in 7-Day Moving Average VMT by County (using January 2020 as benchmark)

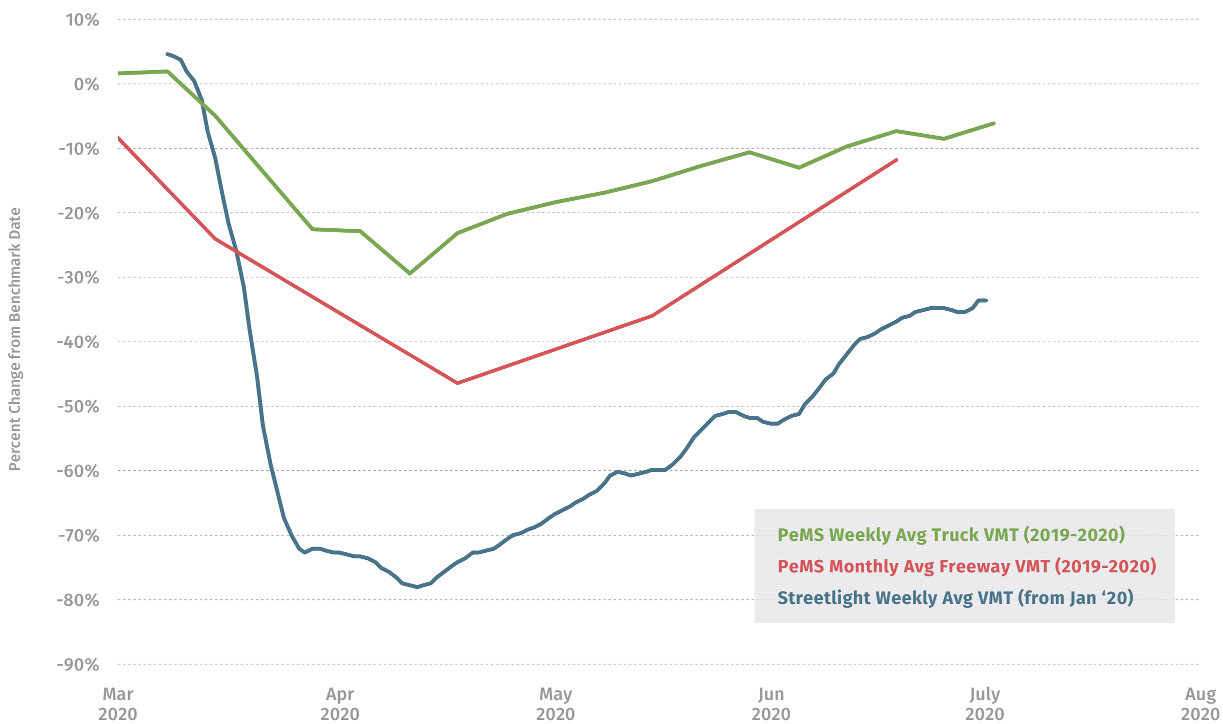


Source: Streetlight Data

VMT declines are much more substantial using Streetlight data encompassing both the freeway and arterial network, suggesting greater reductions in VMT on the arterial network versus the freeway network covered by Caltrans Performance Measurement System (PeMS) data. Truck VMT using PeMS data follows similar patterns of reduction with the lowest drop nearing 30 percent in early April and a gradual rebound by mid-April.

PeMS May 2020 average total freeway VMT was 36 percent below last year. June 2020 VMT was just 12 percent below 2019. Since the low point seen in the week ending on April 11, 2020, VMT has been growing around 2.9 percent per week on average. Truck VMT through the first week of July was only 6 percent below last year. Through the first week of July, VMT using Streetlight data also reflects continued growth at 34 percent below the January 2020 benchmark.

FIGURE 2 **SCAG Region Percent Change in VMT from Benchmark by Week/Month (2019-2020)**



Source: PeMS and Streetlight Data

II. TRANSIT AND PASSENGER RAIL

A. TRANSIT

Transit Ridership Has Declined Significantly in the SCAG region

Transit ridership has declined significantly with initial drops in March, more dramatic losses in April, and some recovery in May. Overall bus ridership fell by over 71 percent in April 2020 compared to April 2019, and by 66.5 percent in May 2020 compared to May 2019.

TABLE 1 Year-Over-Year Monthly Bus Ridership Change (2019 vs. 2020)

	JAN	FEB	MAR	APR	MAY
Anaheim Transportation Network	-1.7%	8.8%	-52.5%	-79.4%	-81.9%
Antelope Valley Transit Authority	4.5%	9.4%	-39.5%	-77.3%	-72.2%
Beach Cities Transit (City of Redondo Beach)	9.9%	14.1%	-43.9%	-85.2%	-81.0%
City of Commerce Municipal Buslines	-0.2%	-24.2%	-55.4%	-89.7%	-84.1%
City of Glendale	0.2%	7.8%	-47.4%	-85.6%	-84.0%
City of Los Angeles Department of Transportation	-13.1%	-40.7%	-53.8%	-79.8%	-76.8%
City of Pasadena	15.0%	18.0%	-27.5%	-67.2%	-64.9%
Culver City Municipal Bus Lines	-7.6%	1.3%	-40.6%	-75.8%	-72.0%
Foothill Transit	2.6%	7.5%	-39.7%	-62.1%	-53.4%
Gold Coast Transit	10.8%	13.2%	-30.6%	-65.9%	-59.7%
City of Gardena Transportation Department	5.0%	11.8%	-45.3%	-70.7%	-69.0%
Imperial County Transportation Commission	-0.6%	-4.2%	-37.1%	-77.2%	-76.8%
Long Beach Transit	7.6%	10.3%	-33.7%	-86.6%	-82.7%
Los Angeles County Metro	3.4%	4.2%	-35.0%	-68.6%	-62.6%
Montebello Bus Lines	4.7%	6.4%	-36.9%	-77.1%	-76.5%
Norwalk Transit System	10.8%	13.2%	-33.7%	-77.7%	-71.0%
Omnitrans	3.7%	7.0%	-29.1%	-64.8%	-58.1%
Orange County Transportation Authority	5.1%	8.7%	-33.9%	-76.2%	-75.0%
Riverside Transit Agency	4.5%	9.3%	-33.5%	-72.6%	-66.4%

Table continues on next page

TABLE 1 Year-Over-Year Monthly Bus Ridership Change (2019 vs. 2020) — Continued

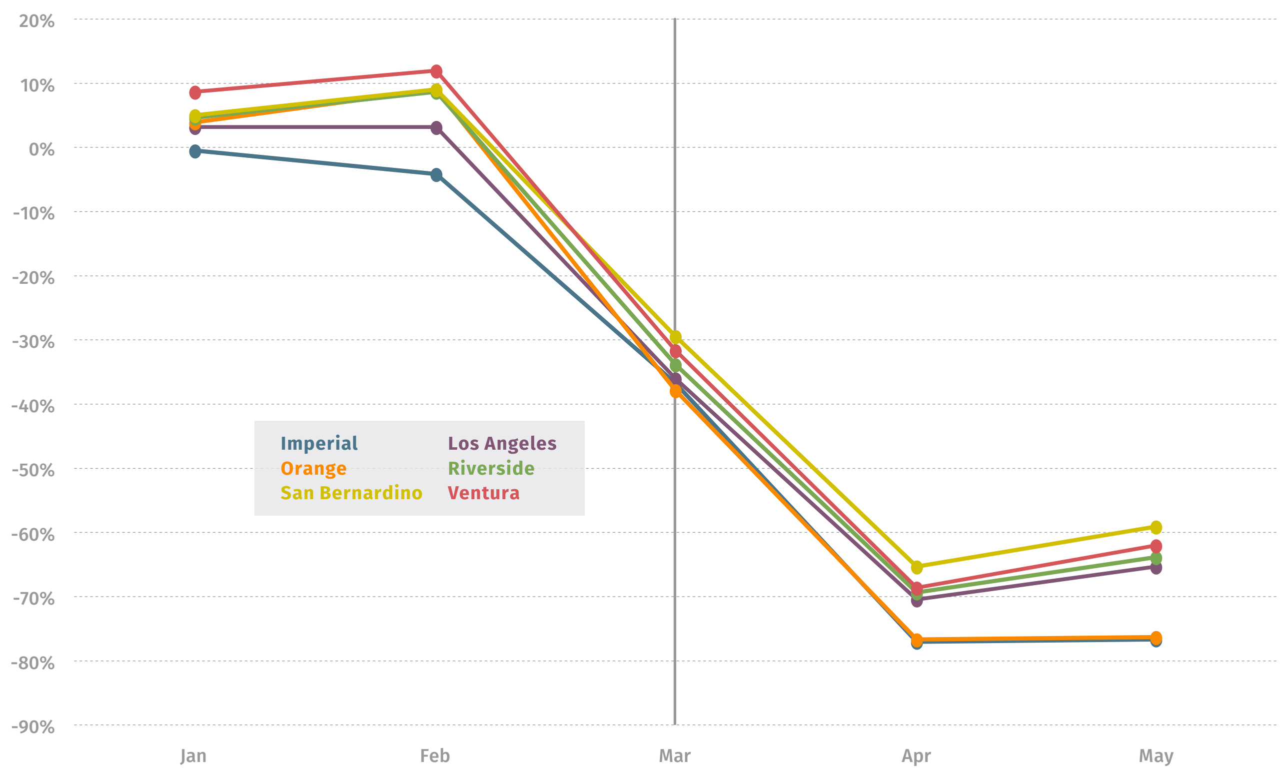
	JAN	FEB	MAR	APR	MAY
Santa Clarita Transit	1.6%	-4.4%	-45.9%	-81.4%	-81.5%
Santa Monica's Big Blue Bus	6.6%	9.4%	-29.5%	-73.1%	-73.6%
SunLine Transit Agency	4.5%	6.6%	-35.5%	-62.9%	-59.6%
Torrance Transit System	12.9%	11.9%	-25.6%	-69.0%	-62.2%
Ventura Intercity Service Transit Authority	-3.3%	5.7%	-37.6%	-82.5%	-75.8%
Victor Valley Transit Authority	11.9%	20.6%	-33.4%	-70.4%	-67.5%
TOTAL	3.1%	3.8%	-36.0%	-71.2%	-66.5%

Source: National Transit Database monthly module adjusted database (https://www.transit.dot.gov/ntd/data-product/monthly-module-adjusted-data-release)

Orange and Imperial Counties Experienced the Steepest Decline in Bus Ridership

Summarizing the data by county shows Imperial and Orange Counties with the steepest decline in bus ridership of 77 percent in April. This pattern held steady in May, while the other counties experienced some recovery.

FIGURE 3 Year-Over-Year Bus Ridership Change, Summarized by County (2019 vs. 2020)



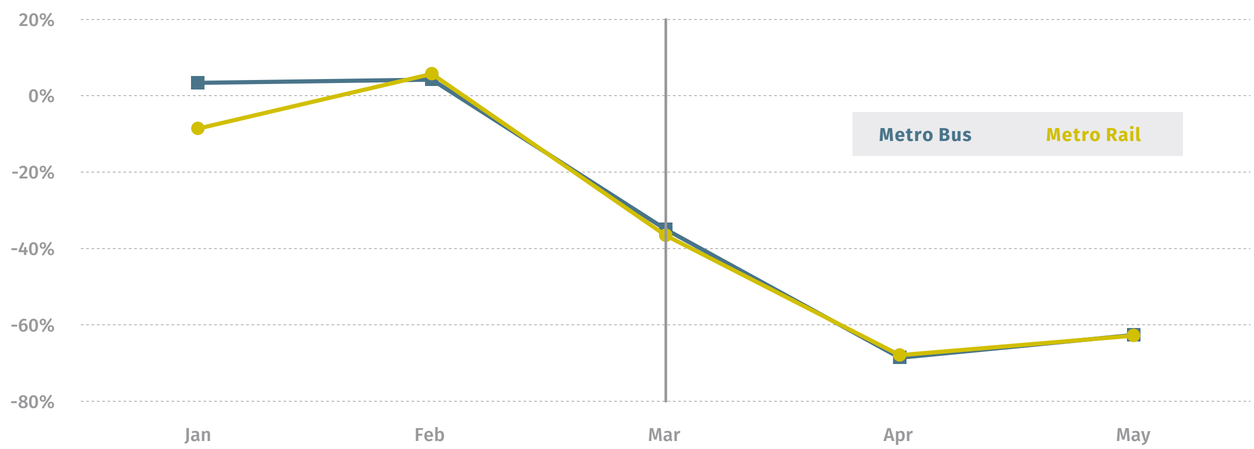
Source: SCAG Analysis of National Transit Database monthly module adjusted database

B. LOS ANGELES METRO

Ridership Declined in March and April, Recovered Slightly in May

Two out of every three transit riders in the SCAG region are carried by Los Angeles Metro Bus or Rail service. Los Angeles Metro reported its bus system ridership declined 68.6 percent and rail ridership declined 67.9 percent, year-over-year, April 2020 versus April 2019. Ridership fared a little better in May, dropping by about 63 percent for both bus and rail when comparing 2020 versus 2019 (Note: Comparisons with 2019 are impacted by the Los Angeles Metro Blue Line closures).

FIGURE 4 LA Metro System Bus and Rail Ridership Year-Over-Year Percent Change (2019 vs. 2020)



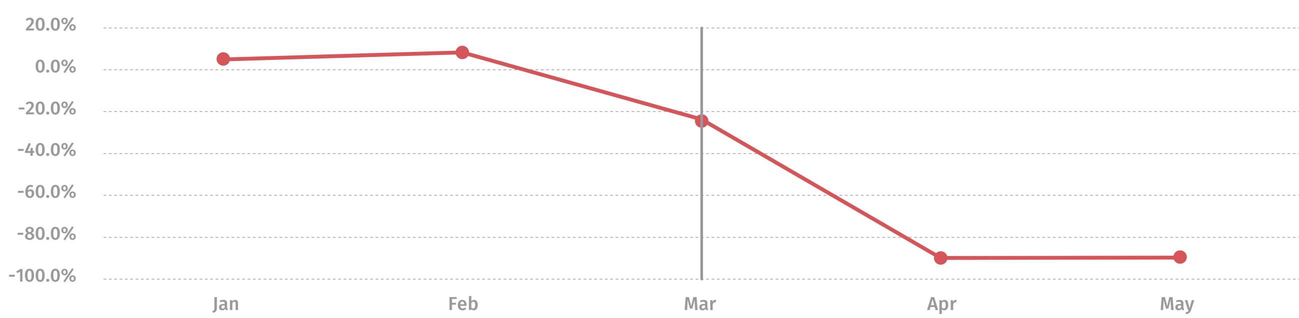
Source: LA Metro (http://isotp.metro.net/MetroRidership/Index.aspx)

C. METROLINK COMMUTER RAIL

Metrolink Experienced Nearly 90 percent Ridership Decline

Metrolink experienced record ridership levels in fiscal year 2018-2019, carrying close to 12 million riders. This was in contrast to nearly every other major transit provider in the SCAG region. Metrolink's success was especially notable given that 85 percent of Metrolink riders own a car. Unfortunately, this trend was reversed due to the pandemic and the mandatory stay-at-home orders. Metrolink experienced a steep drop in ridership, losing about 90 percent of its ridership in April and May, when comparing 2020 to 2019.

FIGURE 5 Metrolink Ridership Year-Over-Year Change (2019 vs. 2020)



Source: Metrolink

III. AVIATION

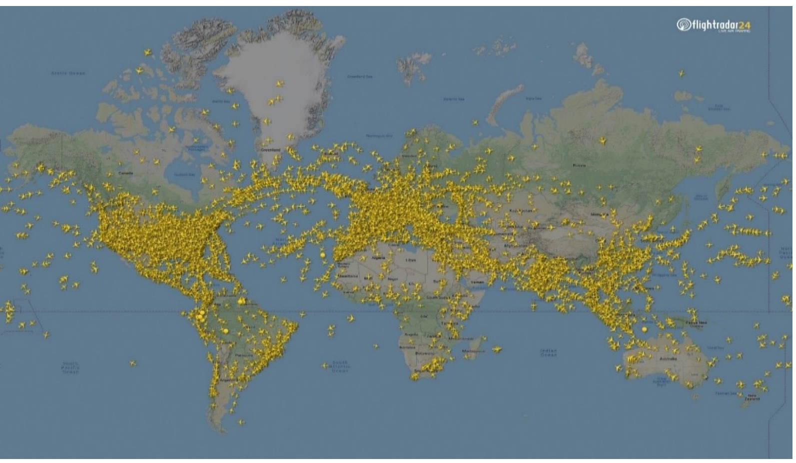
A. AIR PASSENGER TRAFFIC

Air Passenger Demand Down Globally, Nationally, and in the SCAG Region

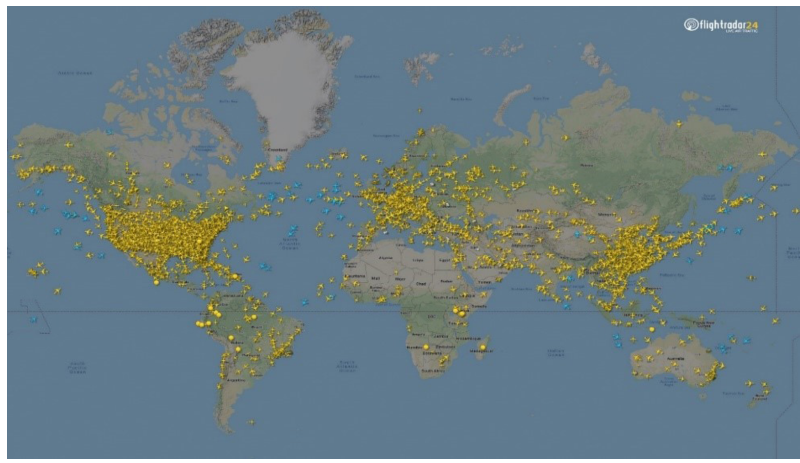
Air passenger activity throughout the World, United States, and within the SCAG region, has been significantly impacted by the COVID-19 pandemic. Global air traffic was down 65 percent from March 2020 (15,012 flights) to April 2020 (5,275 flights).

Global Air Traffic from March 7, 2020 to April 7, 2020

MARCH 7, 2020



APRIL 7, 2020

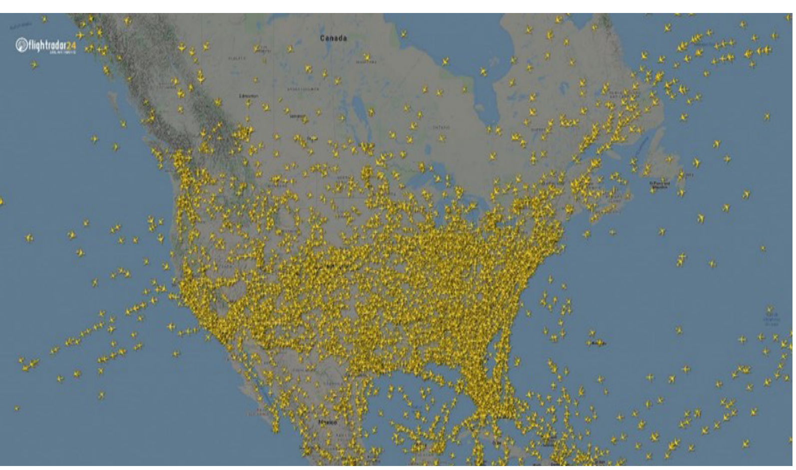


Source: flightradar24.com

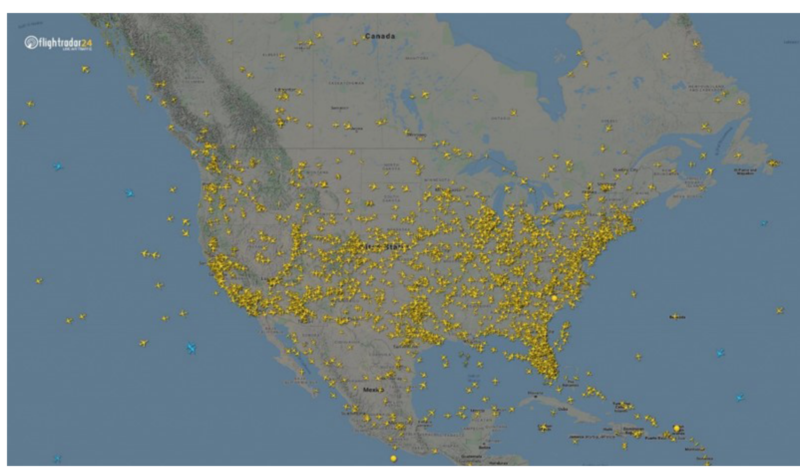
Similar to global air traffic, flights in North America have declined considerably. Air traffic in the United States was down 65 percent as well from March (8,400 flights) to April (2,950 flights)

North American Air Traffic from March 7, 2020 to April 7, 2020

MARCH 7, 2020



APRIL 7, 2020



Source: flightradar24.com

Air passenger demand in the SCAG region was not immune to the impacts of the COVID-19 pandemic. The decline in regional air passenger demand mirrors global and national trends. Air passenger traffic has declined significantly in the months following the COVID-19 outbreak. In comparison to last year, air passenger traffic was down almost 60 percent in March and 96 percent in April.

FIGURE 6 Total SCAG Region Airport Passengers (2019 vs 2020)

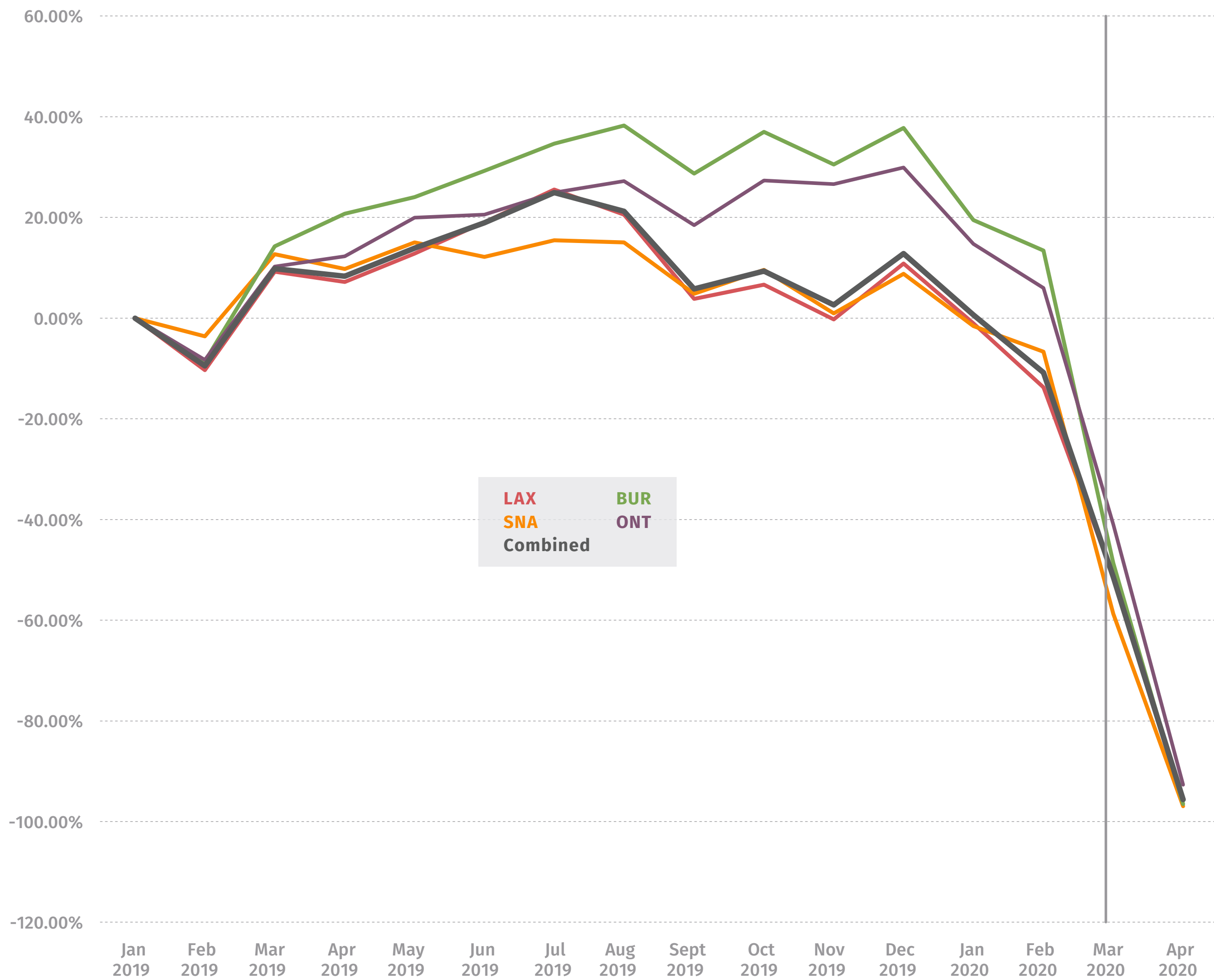
TABLE 2 Total SCAG Region Airport Passengers (2019 vs 2020)

2019 vs 2020	JAN	FEB	MAR	APR
Total Passengers	0.81%	-4.90%	-57.49%	-96.08%
Air Cargo (Tons)	-3.07%	-3.34%	-3.67%	-0.37%
Total Aircraft Operations	1.40%	3.64%	-22.29%	-60.76%

Source: Airport monthly activity reports and Federal Aviation Administration (FAA) Air Traffic Activity Data System (ATADS)

The impact of the COVID-19 pandemic has been consistent across the commercial airports throughout the SCAG Region. In comparison to January 2019, air passenger demand in the SCAG region was down over 80 percent following the March 2020 stay-at-home orders.

FIGURE 7 SCAG Region Air Passenger Percent Change from January 2019 (Jan 2019 to April 2020)



Source: Airport monthly activity reports

B. AIRCRAFT OPERATIONS

Aircraft Operations Down, but Not at Same Level as Passenger Demand

While air passenger demand has seen the greatest decreases, aircraft operations have not been affected to the same extent, most likely due to airlines operating at lower load factors. Although aircraft operations have not decreased at the same rate as passenger demand, operations have experienced significant decreases. Overall, aircraft operations were down 61 percent in the SCAG region from April 2019 to April 2020. At SCAG region commercial airports, aircraft operations were down anywhere between 30-70 percent in comparison to January 2019.

FIGURE 8 Total SCAG Region Aircraft Operations (2019 vs 2020)

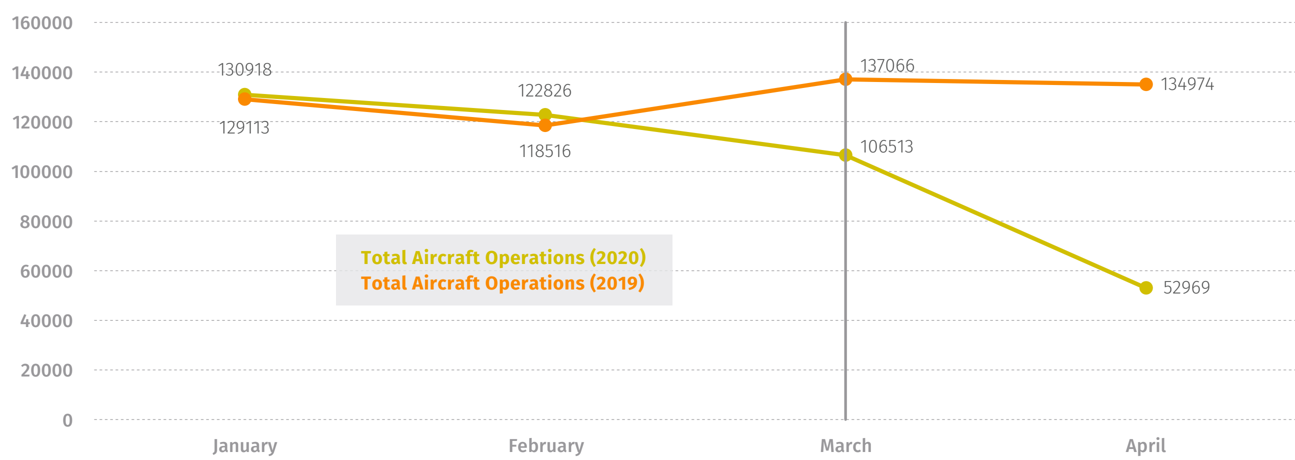
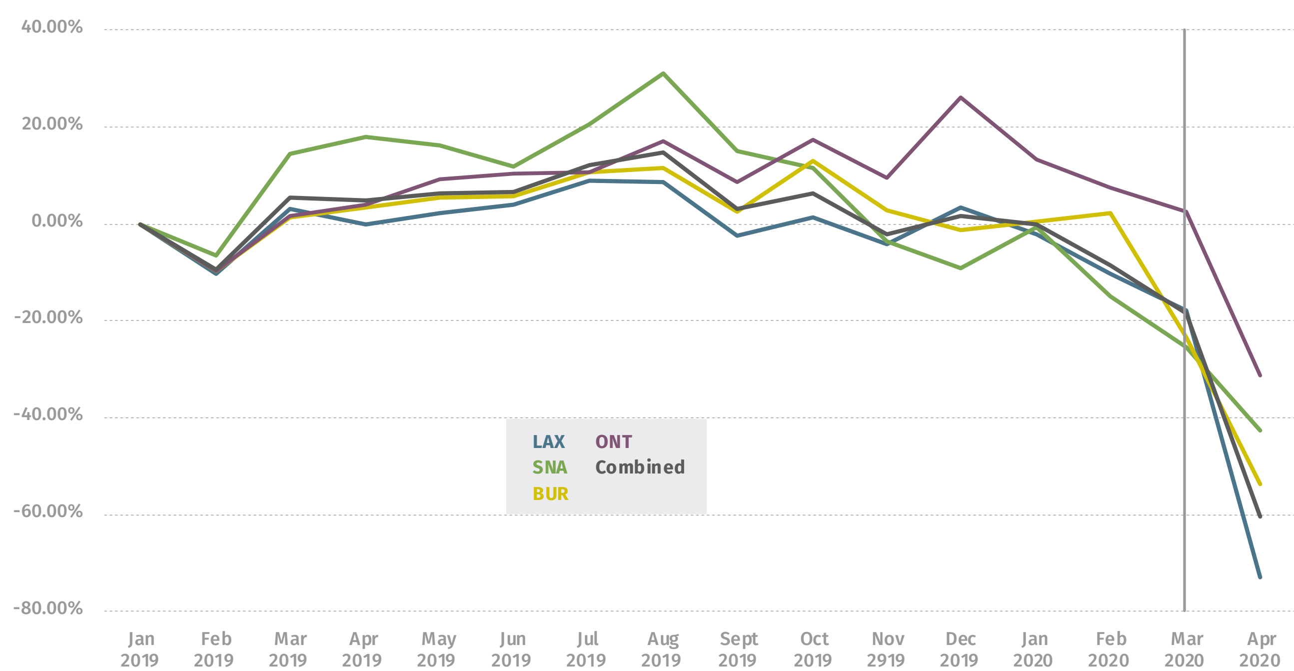


FIGURE 9 SCAG Region Aircraft Operations Percent Change from January 2019 (Jan 2019 to April 2020)



Source: Airport monthly activity reports and Federal Aviation Administration (FAA) Air Traffic Activity Data System (ATADS)

IV. FREIGHT INDICATORS

Freight Has Not Been Immune to COVID-19 Impacts

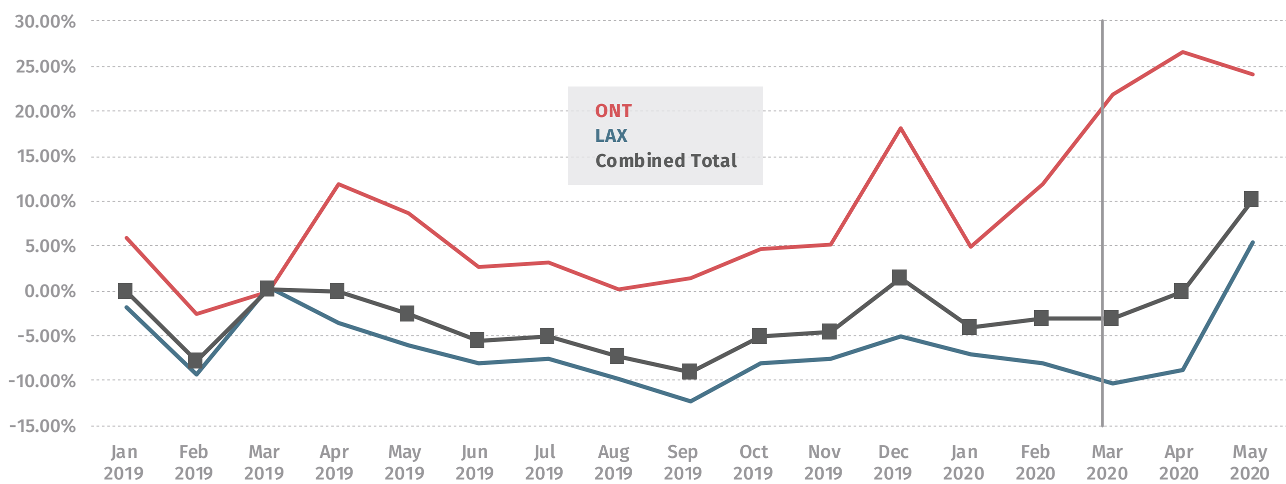
Freight industries have not been immune from volatility caused by the COVID-19 pandemic. Freight performance has witnessed substantial effects from other areas over the past three years leading up to the COVID-19 pandemic. This has included beneficial factors such as historically low unemployment through the early part of 2020 and increasing real gross domestic product (GDP) from 2016, reaching a peak in the second quarter of 2018. Concurrently, international trade has been highly volatile due to the Trump administration's foreign trade policies, most notably tariff actions against China, Europe, and Mexico, as well as other trade agreement dynamics.

The pandemic has also had varying impacts on different freight modes and components of supply chains. Domestic air freight has actually benefited from the surge in e-commerce based deliveries. Trucking witnessed an initial spike in demand during the month of March driven by consumers rushing to purchase essential goods, and has since seen levels decline to a low-point in April, with a gradual recovery through early June. International trade modes have all witnessed varying impacts, most notably from China's lockdown in the early part of the year leading to significant declines through March.

A. AIR FREIGHT AND MAIL CARGO

Recent impacts on air freight has been mixed, primarily relating to domestic versus international performance. Domestic air freight has been much more correlated with household consumer deliveries of essential items and the exponential increase in e-commerce online orders and deliveries. Domestic freight has played an important role in the supply chain during the COVID-19 pandemic.

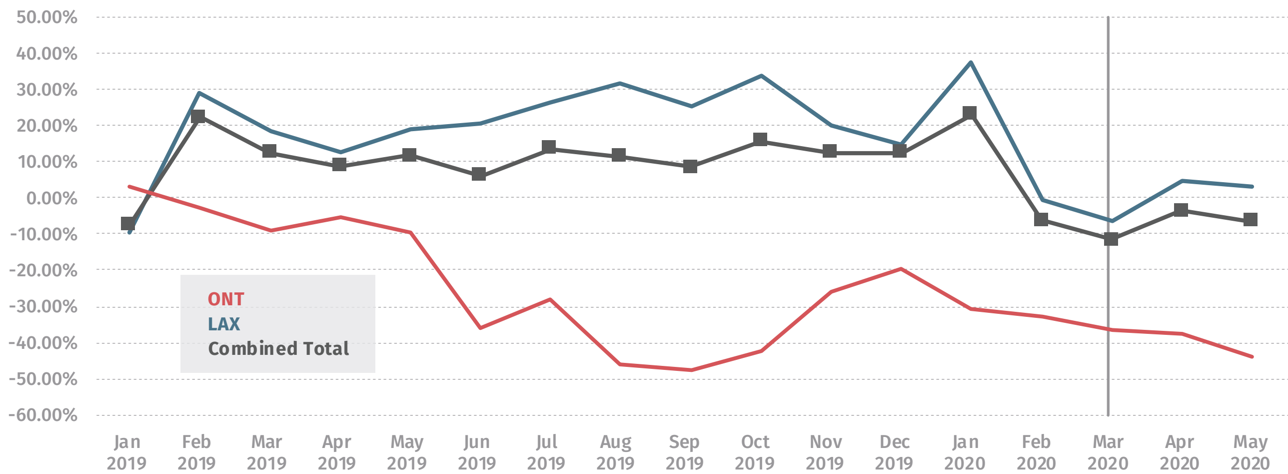
FIGURE 10 Los Angeles & Ontario Airports Percent Change in Freight Tons by Month (2019-2020)



Source: SCAG Analysis

For mail tons, the impact of the pandemic during March and April was much less severe versus international maritime shipments and other freight modes.

FIGURE 11 Los Angeles & Ontario Airports Percent Change in Mail Tons by Month (2019-2020)

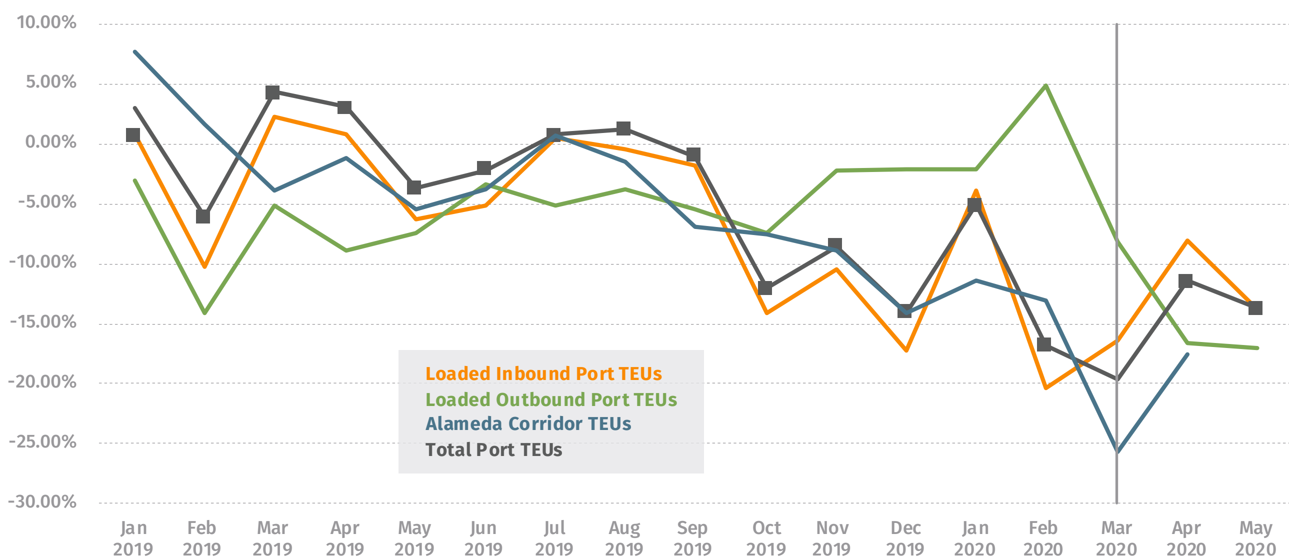


Source: SCAG Analysis

B. SHIPPING TRENDS BY SAN PEDRO BAY PORTS AND ALAMEDA CORRIDOR

Trends for the shipping of twenty-foot equivalent units (TEU) through the San Pedro Bay Ports and Alameda Corridor have been in decline since Fall 2019, compared to performance highs in 2018. For 2020, declines have accelerated with March being the low point, primarily driven by China's earlier lockdown of its economy beginning in late January through early April. May has displayed a modest decline, while loaded exports have dropped to a new low. Trade value has mirrored this performance.

FIGURE 12 SPBPs & Alameda Corridor Percent Change in TEUs by Month (2019-2020)



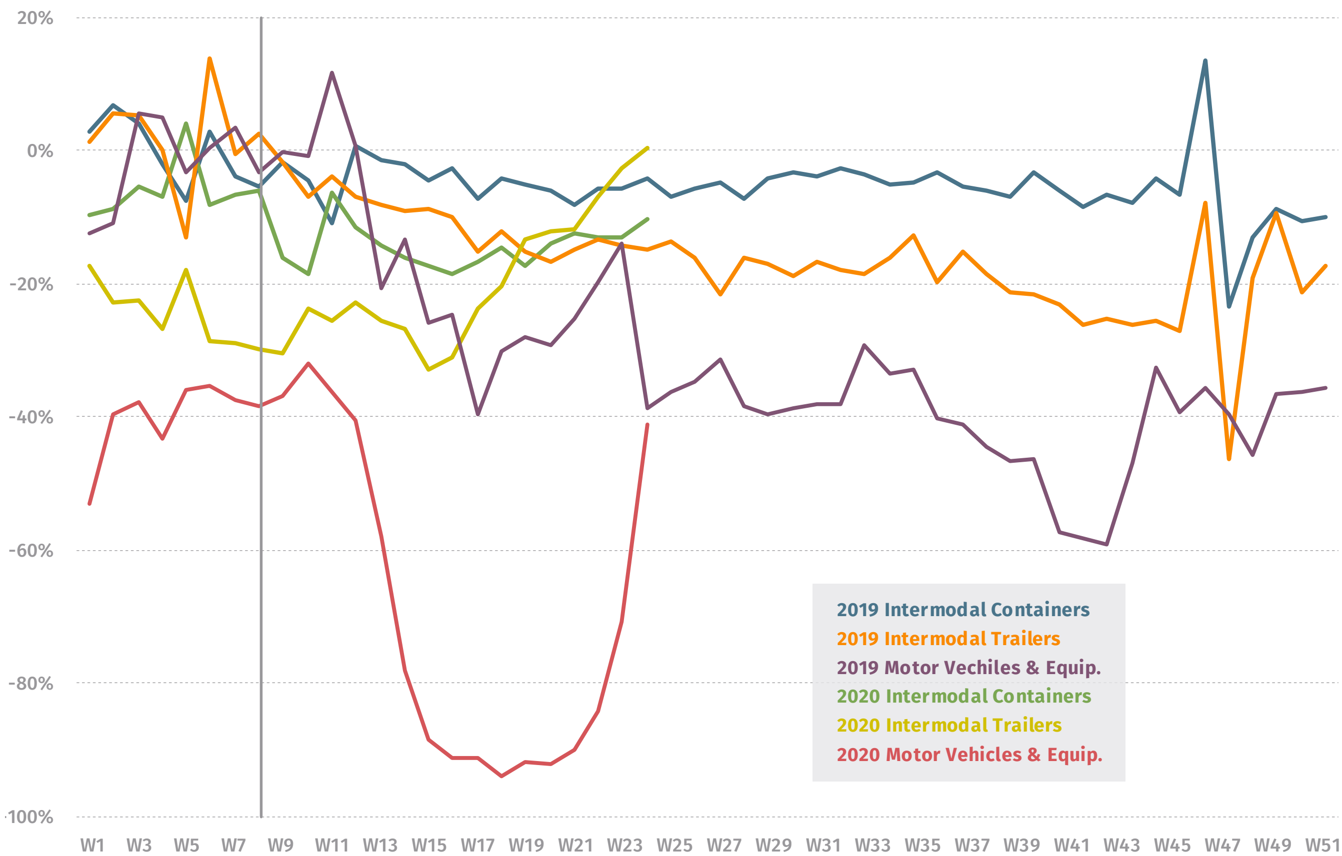
Source: SCAG Analysis

C. CLASS I RAIL OPERATOR PERFORMANCE

Class I rail volumes for intermodal and automotive declined greatly through April, although upward trends have begun to surface.

- Railroads may be benefiting somewhat from e-commerce dynamics for trailers on flat cars.
- Intermodal containers, which include international marine and domestic containers, have improved since March.
- The annual rate of total vehicle sales has been on a steady decline. This has accelerated to a 90 percent drop from last year during April/May. A strong upward recovery has begun through mid-June.

FIGURE 13 BNSF & Union Pacific Percent Change in Containers/Trailers/Motor Veh. & Equip. by Week (2019-2020)

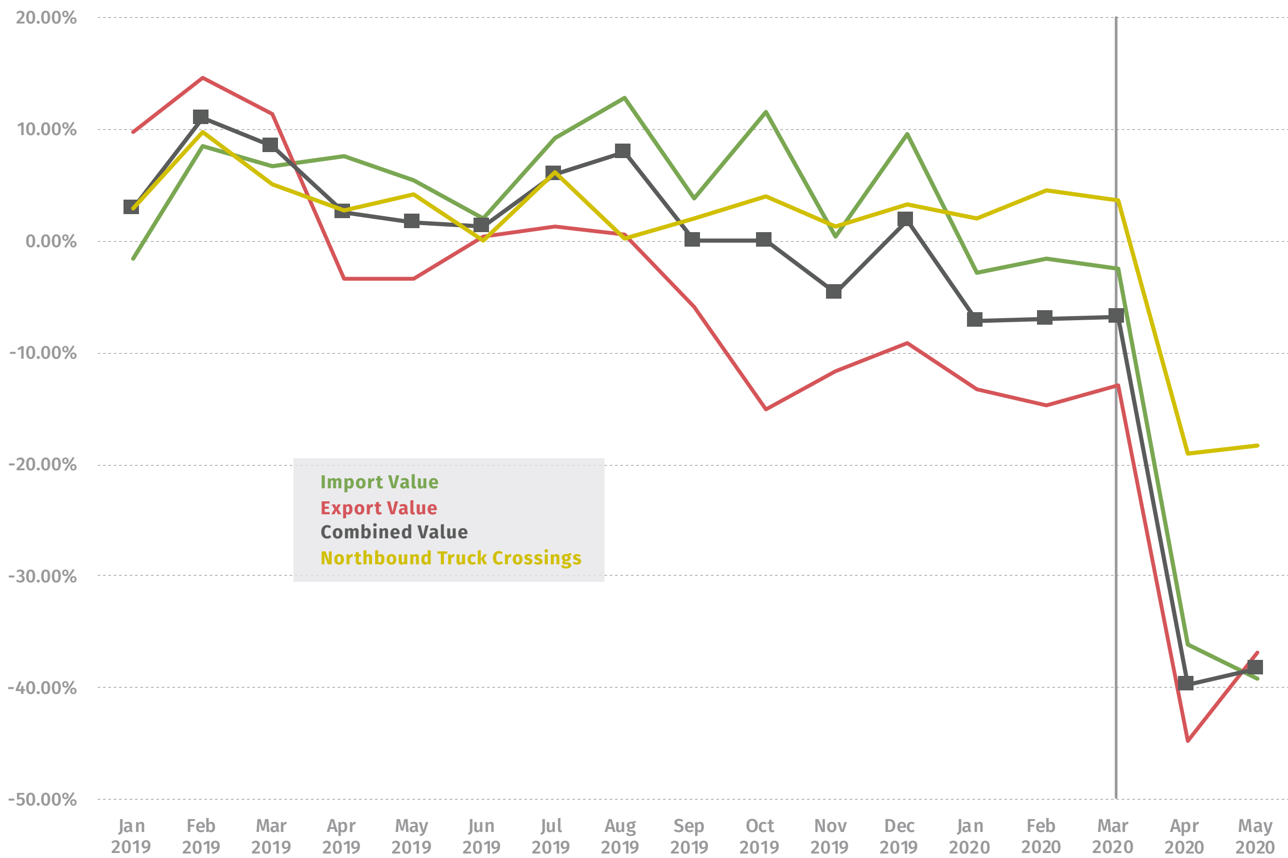


Source: SCAG Analysis

D. BORDER TRUCK CROSSINGS AND TRADE VALUE

Cross-border trade value and truck activity has witnessed a substantial decline as a result of the COVID-19 pandemic. Compared to seaport trade, the greatest impact occurred in April. This is likely due to the closer proximity of the manufacturing supply chain and consumer-driven trends more in line with U.S. domestic patterns. The drop in northbound trucks was not as severe, however, suggesting higher value of goods transported.

FIGURE 14 Imperial County Percent Change in Trade Value & Truck Crossings by Month (2019-2020)



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