

Downtown Congestion Post-COVID Traffic Trends In the Top 10 U.S. Cities



Metrics included: Vehicle hours of delay Rush hour trends Visitor travel and more

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I. INTRODUCTION

The pandemic-spurred drop in overall vehicle miles driven is over. Vehicle Miles Traveled (VMT) across much of the U.S. is back to roughly pre-COVID levels, with FHWA statistics showing that Total U.S. VMT in February 2022 was just 3% below pre-pandemic numbers measured in February 2020.

This may signal good news for the economy, but it's bad news for overall emissions and quality of life as traffic congestion makes a comeback across America.

What is different this time around is where and when people are driving.

Vehicle travel is happening close to home, away from city centers, as work-from-home culture persists, if to a lesser degree than in Spring 2020. Miles traveled are still **down approximately 27%** in the downtowns of our largest cities, even as VMT in the greater metros of the same cities is **above pre-COVID levels**, according to StreetLight's analysis cited in this report. There is also some evidence to suggest that downtown congestion — as measured by StreetLight's Vehicle Hours of Delay (VHD) Metric — is coming back faster than miles traveled in some cities, and that peak hours may be shifting as part of our new normal. While our downtowns may not be empty, they certainly aren't "back," causing economic adversity in the central core of American cities, previously so reliant on the predictable travel patterns of daytime workers.

In this report, we look at weekday VHD in the downtown cores of America's 10 biggest cities in April of each of the last three years (2020-2022), along with how rush-hour traffic patterns are shifting.

Then we analyze two sample business districts — New York's Financial District and Downtown Houston for the a.m. peak weekday hours in January through March 2019 versus the same period in 2022 — to demonstrate how planners can use StreetLight's congestion Metrics to diagnose congestion further and gain deeper insights on post-COVID travel patterns.

Why looking at downtown congestion is critical now

As planners look to revitalize economic activity in downtowns and beyond, understanding downtown travel and mitigating congestion will be critical. Lessening congestion can help make downtowns more attractive cultural centers for visitors and residents, who can support economic growth without relying largely on nine-to-five culture.

Although congestion is rising, it's still below pre-COVID levels. This means there is still an opportunity to rebuild these central cores while infrastructure funds are flowing and there's an appetite for a new paradigm of what a downtown *can be* — namely, one that supports the economy while avoiding the pitfalls of too many cars and the congestion that comes with them.

So how can city planners uncover and address rising congestion? **Here's what the data has to say.**

II. CONGESTION IN TOP IO U.S. CITIES

As the work-from-home trend finds a new equilibrium, miles driven are happening away from city centers. We studied the top 10 U.S. cities by population and found that VMT metrowide is 4% above pre-COVID levels on average, whereas VMT downtown is 27% below pre-COVID levels.

Congestion, as measured by Vehicle Hours of Delay (VHD), is also still under pre-COVID levels, but rising faster than VMT in some cases, suggesting that congestion could soon become a major challenge for downtowns.

VHD measures the amount of time vehicles spend in congestion versus the time travel would take in free-flow conditions.



In cities with smaller downtowns and limited ways in and out of the central core, such as San Diego and Phoenix, VHD is actually nearing pre-COVID levels.

These are cities with limited transit options connecting downtown to the broader metro. They are also cities where rapid population growth is likely amplifying congestion challenges. For example, San Diego's downtown is seeing brisk business, bouncing back from COVID with a vibrant nightlife and return of tourism.

CONGESTION IS RISING IN DOWNTOWNS OF THE TOP IO U.S. CITIES*

Measured by Vehicle Hours of Delay (VHD)



III. A SHIFT IN PEAK DOWNTOWN TRAVEL HOURS

While VHD is coming back in the city core, it's not evenly distributed throughout the day.

StreetLight finds that VHD in the 10 city cores is approximately 40% below April 2019 levels on average during peak a.m. hours, but only 22% lower during midday hours. Traffic builds later than it used to and is coming back faster during the nonpeak hours.

As a result, the trends we are seeing in congestion are amplified when broken out by day part:

- San Diego stands out especially when looking at day part trends. Midday and peak p.m. hours are nearly at parity with pre-COVID congestion.
- Los Angeles is also close to parity with pre-COVID congestion in the midday hours, but a.m. and p.m. are still down significantly.
- Bucking the trend elsewhere, Houston is still seeing depressed VHD in the morning and midday, but its peak p.m. VHD is only 13 percentage points below where VHD stood in 2019.

In every downtown studied, the morning is still seeing lower delays compared to pre-COVID than any other time of day. People who are coming back into the office seem to be doing so later in the day — and based on <u>other StreetLight analyses</u>, staying fewer hours than the historic nine-to-five.

CONGESTION IS COMING BACK FASTEST DURING MID-DAY HOURS (IOAM-3PM)

Top 10 U.S. Downtowns



* Each city refers to VHD in the downtown core of the city; New York refers to the city's Financial District in Lower Manhattan



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Phicle Hours of Delay (VHD)		
	VHD	
12am - 6am	2	
6am - 10am	47	
10am - 3pm	43	
3pm - 7pm	67	
7pm - 12am	24	
GRAND TOTAL	183	



IV. DIAGNOSING CONGESTION: DOWNTOWN TRAFFIC BY COMMUTE DISTANCE

To understand traffic pattern shifts at a more granular level, StreetLight analysts did a deep dive on the Financial Districts in Lower Manhattan and Downtown Houston to see how the distribution of visitors traveling into these areas had changed since pre-COVID days. To do so, they measured volume on 10 select road segments in each downtown.

Both of these areas are dominated by offices and analysts expected COVIDinitiated work-from-home norms to impact traffic accordingly. Across the board, a.m. traffic heading into both areas has decreased since pre-COVID, but what else does the analysis reveal?

FINANCIAL DISTRICT, NEW YORK CITY



In Manhattan's Financial District, trips originating more than 50 miles away are down a whopping 40% since pre-pandemic, but even trips from other New York City neighborhoods less than 10 miles from Manhattan (where most commuters reside) are down approximately 30%.

Houston's numbers are less pronounced, with trips from more than 50 miles away down by approximately 26%.

There seems to be a clear tradeoff happening: For those with more manageable distances to travel, the pull of downtown is strongest. But for those coming from much farther away, downtown office culture holds the least sway.

To put the data in context, more than 60,000 people live in the lower Manhattan Financial District, many of whom moved in post-9/11 with the creation of new housing units and a wave of services that followed. Walking to work was the norm pre-COVID and downtown streets, parks, and restaurants are busy with locals once again.

DOWNTOWN, HOUSTON, TX



By contrast, downtown Houston is home to around 15,000 people, with the majority of housing located amid the vast urban sprawl that is typical of Texan cities. However, downtown Houston is a bustling hub for businesses and attractions like the Houston Aquarium, a vibrant theater scene, large sport and live music arenas, and famous local restaurants.

While housing density varies among downtown areas in major cities, the data consistently show a drop in peak a.m. traffic volume, which suggests not only that fewer people are commuting to offices downtown, but also signals that these downtown attractions are seeing fewer visitors, causing economic centers to suffer.

V: DATA-INFORMED STRATEGIES TO HELP DOWNTOWNS THRIVE

The takeaway: Many office workers, especially those with the longest distance to travel, still aren't returning to downtown. For those who are coming into town, they are traveling later in the day and appear to be limiting their hours spent in the city core.

Office occupancy rates reflect this. A Kastle Systems study¹ using data from office key card readers showed that office buildings in top U.S. business districts were still under 50% occupancy as of August 2022, compared to pre-COVID.

If cities want to spark economic activity, they will need to think beyond nine-to-five culture.

Tackling congestion can be a key part of this effort. Smart Growth America² notes congestion mitigation measures can include investing in transit and active transportation infrastructure, as well as bike- and carsharing, and providing more first- and last-mile connections to high-capacity transit.

These strategies can help support downtowns and make them places people want to visit, socialize, and reside in, rather than relying on office workers to prop up economic activity.

MOST OFFICE WORKERS ARE STILL NOT BACK AT THEIR CUBICLES



Average Occupancy in April 2021, 2022

To that end, the pandemic offered urban planners a chance to return many public spaces to pedestrians and cyclists. This effort is part of what Carlo Rotti, international architect and Director of the Senseable City Lab at MIT, refers to as the "creative destruction" cities will need to undergo to reinvent themselves as "more beautiful and welcoming."³

Rotti suggests that beginning to think of urban spaces as incubators of the "15-minute city," where residents have access to all their needs in convenient walking distance, can create a sustainable mobility ecosystem.

Leaning into downtown destinations as cultural capitals also shows significant promise. For example, while the number of workers in offices is still below pre-COVID levels, the percentage attending popular entertainment such as NBA games or making restaurant reservations is now nearing parity with pre-COVID behavior. Richard Florida, co-founder of CityLab and author of The New Urban Crisis, notes that even before 2020, downtowns were beginning to evolve from the "one-dimensional, work-only central business districts of the 1950s,"⁴ and returning to their roots as mixed-use communities with denser urban amenities like restaurants, cultural venues, schools, and other services.

With rents skyrocketing again in places like Austin and Manhattan⁵, it's clear that the desire to live in a city persists – but not only because the office is there.

⁵ Newsweek, "These U.S. Cities Have Seen the Biggest Hike in Rent Prices," July 2022.

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