INRIX

2020 Global Traffic Scorecard

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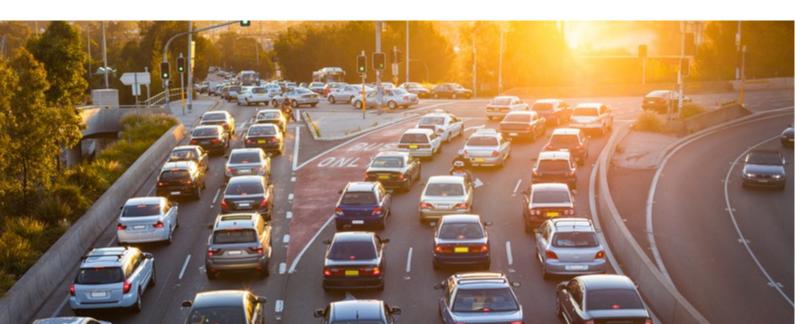
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INTRODUCTION

For nearly every country across the globe, 2020 represents a year in which a global pandemic wreaked havoc on industries, businesses and consumers alike, causing unprecedented economic and social disruption and reshaping the movement of people and goods across all modes of transport as we know it. As we embark on the one-year anniversaries of country-wide lockdowns throughout the world, the INRIX 2020 Global Traffic Scorecard is intended to show the here and now effects on commuting, while beginning to shape expectations for what's to come in 2021 and beyond.

To no surprise, the COVID-19 pandemic upended short and long transportation trends. Employers, where possible, implemented "work from home" policies, and governments around the world imposed, lifted and re-imposed lockdowns in an attempt to limit the virus' spread. The lockdowns, in general, restricted business operations and consumer activity, leading to large decreases in travel across all modes, the likes of which has not been seen since vehicular, rail and air travel data has been collected.

People eschewed public transportation, and many stopped sharing rides. Cycling and walking became popular for recreation, yet appear to have dropped in commuting along with other modes. In some areas, automobile registrations increased along with recreational vehicle sales. As a result, general trends in traffic congestion levels – which the 2020 Scorecard reflects – show "positive," as people largely avoided traffic jams associated with the morning and afternoon commute.

Historically, traffic congestion has grown alongside the demand for trips. Growth and densification, increased demand for goods and services, and employment growth have worked to increase trip demand, which is served via road, rail, air and water transportation systems. In many cities, the bulk of trip demand is served by the automobile, providing point-to-point travel. Often and at certain periods through the day, demand for car travel exceeds road capacity, leading to externalities like air pollution, injury, property damage, lost time and wasted fuel.

The rise in prominence of emergent technologies, like electric vehicles, shared bikes and scooters have sought to address harmful externalities and lead urban mobility into a greener, safer direction. Within this complex and evolving landscape, coupled with the impact of COVID-19 on global transportation networks, the 2020 Scorecard provides valuable mobility insights across modes and between cities.

KEY FINDINGS

- Bogota (133 hours), Bucharest (134 hours), New York (100 hours), Moscow (100 hours) and Philadelphia (94 hours) comprise the Top 5 most congested cities in the world by Impact Rank, despite a 22% to 34% drop from 2019.

- In the U.S., drivers lost an average of 26 hours due to congestion in 2020, down from 99 hours last year, saving the country $51 billion or $980 per driver. New York (100 hours), Philadelphia (94 hours) and Chicago (86 hours) lost the most time to traffic congestion, despite a 28% to 40% drop in congestion from 2019. Washington, D.C. (29 hours) saw the largest decrease globally in congestion, down 77% compared to last year.

- In the U.K., drivers lost on average 37 hours due to congestion in 2020, down from 115 hours in 2019, saving the country £3.4 billion or £613 per driver. London (69 hours), Lincoln (47 hours) and Bristol (37 hours) lost the most time to traffic congestion, despite a 53% to 64% drop from 2019. Belfast (31 hours) saw the largest change in congestion where delay fell 73% compared to last year.

- In Germany, drivers lost on average 26 hours due to congestion in 2020, down from 46 hours in 2019, saving the country more than 500 million € or 202 € per driver. Munich (65 hours), Berlin (46 hours) and Hamburg (33 hours) lost the most time to traffic congestion, despite a 25% to 31% drop from 2019. Dusseldorf (27 hours) saw the largest change in congestion where delay fell 46% compared to last year.

- Downtowns, the hardest hit areas by the pandemic due to the densification of people, employment, office buildings, restaurants and entertainment, are projected to be last to recover during the re-emergence period, lagging suburban and rural travel throughout 2021. Over the first two months of 2021, trips to downtown were down 44% from pre-COVID levels in the U.S, down 52% in the U.K. and 40% in Germany.

- Traffic congestion often imposes disproportionate costs on those who can least afford it – people with the least flexible schedules, entry-level employees, students and low-income families. Yet travel time improvements during the COVID-19 pandemic allowed essential workers, local delivery fleets and services, and long-haul freight to largely travel unimpeded by recurring traffic congestion.

DATA & METHODOLOGY

The 2020 Scorecard builds upon the methodology adopted two years ago, providing a more granular and holistic analysis of mobility within the world's most congested cities. The 2020 Scorecard continues to include travel time comparisons, collision trends and last-mile speeds based on the unique commuting patterns within each metro area.

Vehicle-miles traveled (VMT), also referred to as miles-driven, has been added to the 2020 Scorecard. VMT is vital to understanding the movement of people and goods and is correlated with the economy. It also allows decision-makers, in both public and private sectors, to calculate fuel tax and toll revenues, estimate and analyze oil demand and gauge the health of transportation networks.
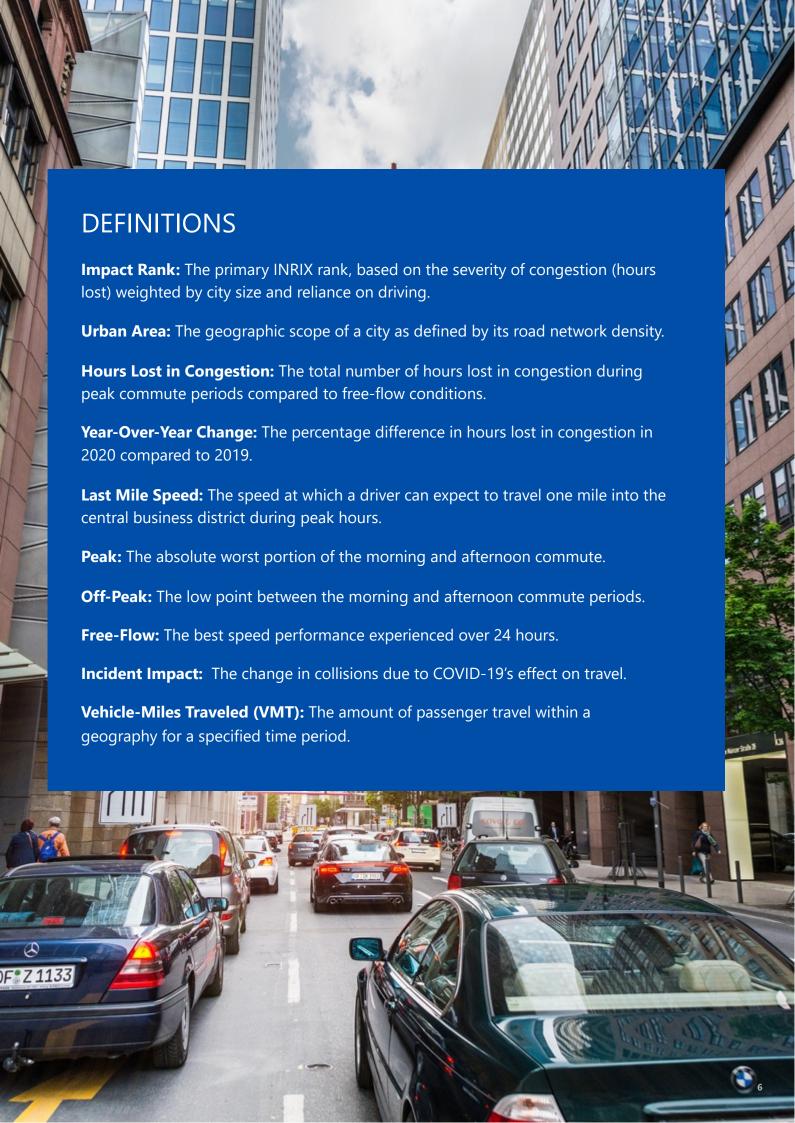
As with the 2019 Scorecard, commute times were calculated by looking exclusively at the time it takes to get to and from the downtown core from surrounding commuter neighborhoods. However, many cities have multiple major employment centers. The 2020 Scorecard used anonymized GPS probe data to identify the most frequented routes and destinations throughout a region to create a more accurate portrayal of commuting for a region, not just to and from a downtown core. With the increased level of detail, INRIX Research calculated the additional time spent commuting due to traffic between multiple points within a region, which can be explored further on the 2020 Scorecard's interactive city pages.

INRIX collects billions of anonymous data points every day from a diverse set of sources, including connected vehicles, mobile devices, navigation units, fleet vehicles, road and garage infrastructure, and publicly available information on incidents. With coverage on all roads in countries of coverage, and lane by lane precision, INRIX is the preferred provider of driving and mobility intelligence for leading automakers, businesses, and all levels of government for accurate, real-time and historical.

The 2020 Scorecard calculates time loss by analyzing peak speed and free flow speed data for the busiest commuting corridors and sub areas as identified by data density. Employing free-flow data enables a direct comparison between peak periods and serves as the basis for calculating time loss. Total time lost is the difference in travel times experienced during the peak periods compared to free flow conditions on a per driver basis. In other words, it is the difference between driving during commute hours versus driving at night with little traffic.

Due to the fluctuations in vehicular travel times associated with COVID-19 in 2020, INRIX Research used 2019's ranking for biking and transport. INRIX calculated trip times for both biking and public transport for the same routes from which vehicle delay is calculated. These calculations determine the feasibility of driving alternatives for the most heavily trafficked commuting corridors in each city of study. Year over year collisions are pulled from the INRIX Riskiest Roads report, which looked at COVID-19's effect on collisions over six months.[1]

The 2020 Scorecard uses three years of historical data to provide a complete year-over-year comparison of congestion and mobility. A multi-year approach enables the identification of trends in the world's largest cities and provides a basis for comparison.

1. Available at https://inrix.com/most-dangerous-roads/

DEFINITIONS

Impact Rank: The primary INRIX rank, based on the severity of congestion (hours lost) weighted by city size and reliance on driving.

Urban Area: The geographic scope of a city as defined by its road network density.

Hours Lost in Congestion: The total number of hours lost in congestion during peak commute periods compared to free-flow conditions.

Year-Over-Year Change: The percentage difference in hours lost in congestion in 2020 compared to 2019.

Last Mile Speed: The speed at which a driver can expect to travel one mile into the central business district during peak hours.

Peak: The absolute worst portion of the morning and afternoon commute.

Off-Peak: The low point between the morning and afternoon commute periods.

Free-Flow: The best speed performance experienced over 24 hours.

Incident Impact: The change in collisions due to COVID-19's effect on travel.

Vehicle-Miles Traveled (VMT): The amount of passenger travel within a geography for a specified time period.

GLOBAL ANALYSIS & RANKING

Bogota (133 hours), Bucharest (134 hours), New York (100 hours), Moscow (100 hours) and Philadelphia (94 hours) comprise the Top 5 most congested cities in the Global Congestion Impact ranking due to their large populations and the significant return of the evening commute within these metro areas. When ranking by hours lost in congestion, four of the Top 10 ranked at least 10 spots higher than last year, with new additions, Bucharest and Zagreb, taking two spots. The impact score captures the aggregate influence of congestion relative to population, whereas hours lost in congestion captures exclusively the intensity of traffic in a given city.

However, given the differing impacts of COVID-19-related government shutdowns and restrictions on travel and trade, traffic congestion levels are now reflective of factors outside of population and employment density, road capacity and mode shares.

Congestion at the most basic level can be described as the demand for road space exceeding supply. For example, highways designed to operate safely at speeds of 60 MPH can move nearly 2,300 cars per lane per hour at 45 MPH. However, that same roadway may carry fewer than 700 cars per lane during facility breakdown.

In general, and in a "normal" year, the most congested cities in the world are either older or rapidly growing cities. High density development patterns characteristic of pre-automobile cities, as found in the most congested European and North American cities, like Paris and New York, makes them particularly ill-suited to the movement of vehicles. In contrast to these older cities, South American cities, like Bogota and Quito, are combating extreme population growth, in geographically constrained environments, with underdeveloped infrastructure. This trendline is reflected in low last mile speeds, despite increases during the COVID-19 pandemic.

2020 Impact Rank(2019)	Urban Area	2020 Hours Lost	YoY Hours Lost	Hours Saved	2020 Last Mile Speed (MPH)	YoY Last Mile Speed	2020 Avg. DVMT
1 (1)	Bogota, Columbia	133	-31%	58	11	22%	-30%
2 (*)	Bucharest, Romania	134	-	-	15	-	-
3 (14)	New York City, USA	100	-28%	40	12	9%	-28%
4 (17)	Moscow, Russia	100	-22%	28	15	0%	-12%**
5 (12)	Philadelphia, PA, USA	94	-34%	48	12	20%	-25%
6 (7)	Paris, France	88	-47%	77	13	30%	-19%
7 (10)	Chicago, IL, USA	86	-40%	59	15	36%	-22%
8 (18)	Quito, Ecuador	87	-40%	57	11	10%	-11%
9 (*)	Zagreb, Croatia	93	-	-	17	-	-
10 (38)	Cali, Columbia	81	-14%	13	12	0%	-6%
11 (11)	Saint Petersburg, Russia	74	-51%	77	15	7%	-12%**
12 (*)	Tallinn, Estonia	88	-	-	20	-	-
13 (*)	Vilnius, Lithuania	86	-	-	26	-	-
14 (31)	Bordeaux, France	85	-32%	40	18	29%	-18%
15 (33)	Bangkok, Thailand	67	-25%	23	14	8%	21%
16 (8)	London, UK	69	-53%	80	14	40%	-29%
17 (*)	Riga, Latvia	78	-	-	22	-	-
18 (6)	Rome, Italy	66	-60%	100	15	36%	-26%
19 (28)	Montréal QC, Canada	63	-46%	54	13	30%	-23%
20 (15)	Dublin, Ireland	66	-57%	88	14	40%	-34%
21 (51)	München, Germany	65	-25%	22	11	0%	-25%
22 (73)	Medellin, Columbia	62	-11%	7	13	0%	-04%
23 (24)	Palermo, Italy	64	-53%	73	11	38%	-32%
24 (5)	São Paulo, Brazil	52	-66%	100	15	15%	-9%
25 (20)	Brussels, Belgium	58	-58%	82	14	47%	-26%

*New to 2020 Scorecard Ranking; **No local figures available, national substituted

UNITED STATES ANALYSIS & RANKING

Drivers in New York (100 hours), Philadelphia (94 hours) and Chicago (86 hours) lost the most time to traffic congestion in 2020 despite a 28% to 40% drop from 2019. Fourth-ranked Boston (48 hours), ranked first in 2019 with 101 hours lost, saw a 68% decrease in delay compared to last year. Washington, D.C. (29 hours) saw the largest change in congestion where delay fell 77% from 2019.

In addition, Boston and Washington D.C. experienced the largest cost savings with drivers pocketing more than $1,000 in each city due to the reduction in traffic delay brought on by the sharp drop in vehicle-miles traveled (VMT).

Time loss ranges are derived for cities in the U.S., U.K. and Germany based upon U.S Department of Transportation guidance. These values are: $14.80 per hour in the US, £7.90 per hour in the UK and 9.00 € per hour in Germany.[2]

Average Daily VMT dropped in all but two U.S. urban areas studied, Fort Meyers, Florida and Mobile, Alabama. San Francisco (-30%), Honolulu (-29%), New York City (-28%) and Detroit (-28%) saw the largest decreases.

Overall, the average American driver lost only 26 hours due to congestion, down from 99 hours in 2019, resulting in savings of $980 per driver over last year. Nationally, drivers saved more than 3.4 billion hours, resulting in $51 billion in time savings compared to 2019.

2020 Impact Rank (2019)	Urban Area	2020 Hours Lost	YoY Hours Lost	2020 Cost Per Driver	YoY Per Driver Savings	2020 City Cost	YoY City Savings	YoY Collisions	YoY Avg. DVMT
1 (4)	New York City, NY	100	-28%	$1,486	$607	$7.7B	$3.3B	-38%	-28%
2 (3)	Philadelphia, PA	94	-34%	$1,388	$735	$3.3B	$1.2B	-28%	-25%
3 (2)	Chicago, IL	86	-40%	$1,279	$889	$4.6B	$3.0B	-5%	-22%
4 (1)	Boston, MA	48	-68%	$711	$1,517	$1.4B	$2.7B	-33%	-26%
5 (6)	Los Angeles, CA	45	-56%	$664	$876	$3.6B	$4.6B	-21%	-21%
6 (7)	San Francisco, CA	47	-51%	$697	$753	$1.1B	$1.9B	-28%	-30%
7 (13)	New Orleans, LA	42	-47%	$617	$564	$300M	$200M	0%	-13%
8 (11)	Houston, TX	35	-56%	$523	$688	$1.5B	$2.2B	-20%	-14%
9 (12)	Miami, FL	35	-57%	$512	$699	$1.3B	$2.2B	-8%	-20%
10 (20)	Dallas, TX	34	-46%	$503	$439	$1.6B	$1.3B	-32%	-14%
11 (15)	Stamford, CT	38	-48%	$564	$542	$200M	$300M	-30%*	-13%*
12 (5)	Washington, DC	29	-77%	$427	$1,426	$1.1B	$3.0B	-26%	-25%
13 (9)	Baltimore, MD	27	-68%	$402	$854	$500M	$800M	-18%	-24%
14 (8)	Portland, OR	27	-69%	$403	$928	$400M	$800M	-28%	-22%
15 (14)	Seattle, WA	25	-67%	$366	$741	$600M	$1.2B	-35%	-24%
16 (21)	Denver, CO	24	-61%	$359	$583	$450M	$950M	-29%	-16%
17 (17)	Providence, RI	24	-65%	$358	$688	$250M	$550M	-26%	-25%
18 (59)	Santa Rosa, CA	26	4%	$384	-$10	$100M	$2M	-30%*	-13%*
19 (25)	San Juan, PR	22	-49%	$329	$329	$200M	$200M	-30%*	87%*
20 (35)	Ann Arbor, MI	25	-22%	$368	$111	$50M	$20M	-30%*	-13%*
21 (55)	Sarasota, FL	29	11%	$428	-$40	$100M	$12M	-10%	-13%*
22 (10)	Atlanta, GA	20	-75%	$300	$926	$750M	$2.3B	-25%	-13%
23 (63)	Portland, ME	23	-3%	$343	$15	$90M	($4M)	27%	-28%
24 (44)	Escondido, CA	26	-17%	$379	$84	$25M	($5M)	-30%*	-13%*
25 (43)	Kaneohe, HI	29	8%	$430	-$27	$6M	$0.4M	-30%*	-13%*

Top 25 Worst Corridors in the U.S.

Throughout the country, delay on the busiest corridors decreased versus 2019 along with congestion metro wide. Chicago's Eisenhower Expressway had the largest delay in 2020 at 41 hours, down from 56 hours in 2019. Other familiar names continued to top the busiest corridors, albeit with dramatic reductions in delay, with New York's Brooklyn Queens Expressway (30 hours) and Cross Bronx Expressway (23 hours) remaining in the Top 5. Last year, I-5 in Los Angeles topped the list at 80 hours of daily delay but dropped completely out of the Top 25 by 2020.

Rank	Urban Area	Road Name	From	To	Avg. Peak Delay (mins)	2020 Hours Lost
1	Chicago, IL	Eisenhower Expressway E	I-290/294	I-90/94 Interchange	10	41
2	New York City, NY	Brooklyn Queens Expy	I-495	Tillary Street	8	30
3	New York City, NY	Cross Bronx Expy	Bronx River Pkwy	Washington Bridge	6	23
4	New York City, NY	Brooklyn Queens Expy	Exit 23 / 4th Ave / 38th St	Exits 28,28A / Hicks St / Old Fulton St	6	23
5	San Francisco, CA	I-680	Mission Blvd	Scotts Corner	6	22
6	San Francisco, CA	CA-4	I-680	Willow Pass Rd	5	22
7	Stamford, CT	I-95 Connecticut Turnpike	Saugatuck Ave	Indian Field Road	5	21
8	Los Angeles, CA	US-101	New Hampshire Ave	110 Interchange	5	19
9	Los Angeles, CA	S La Cienega Blvd	I-405	West Adams	5	19
10	Atlanta, GA	I-75	Langford Parkway	Exit 250 / Williams St / Peachtree Pl	5	19
11	Tampa, FL	US-92 Hillsborough Ave	Wishart Blvd	Longboat Blvd	5	18
12	Dublin, CA	I-580	MM 40	Airway Blvd	4	18
13	Los Angeles, CA	US-101	I-405 Interchange	Hollywood Freeway	4	18
14	Boston, MA	I-93	Pilgrims Highway	Morrissey Blvd	4	18
15	Chicago, IL	I-90 E	I-90 / I-94 Edens Expy	Western Ave	4	17
16	New York City, NY	1st Ave	E 53rd Street	Paladino Ave	4	17
17	New York City, NY	2nd Ave	66th St	E Houston Street	4	17
18	Miami, FL	I-95	NW 46th St	NW 151st St	4	17
19	San Francisco, CA	Hillside Ave	I-680 / CA-24 / Ygnacio Valley Rd	Wimbledon Rd	4	17
20	Austin, TX	I-35 N	I-35 Oltorf Street	I-35 East MLK/State Capitol	4	16
21	Atlanta, GA	I-285	Chamblee Tucker Road	I-20	4	16
22	Boston, MA	Memorial Dr	Magazine Street	Concord Turnpike	4	16
23	New York City, NY	2nd Ave	127th St	East 67th St	4	16
24	San Francisco, CA	CA-24 E	Caldecott Tunnel	Acalanes Road	4	16
25	Bridgeport, CT	I-95 N	Sherwood Island Conn.	Housatonic River	4	16

Downtown Travel in America

In the U.S., Detroit saw the largest drop (-91%) in trips to downtown from February to April, followed by Boston (-87%), San Francisco (-87%), New York (-85%), Washington D.C. (-83%) and Denver (-83%). Trips recovered to downtown Boston (-60%) and lower Manhattan (-51%) by September, yet continued to remain low in San Francisco (-70%), Washington D.C. (-65%) and Detroit (-64%). Portland (-69%) and Houston (-64%) also saw some of the largest trip declines by September. By February 2021, a full year after COVID-19 shutdowns began, trips to downtown remain lower than last year, ranging from -16% in Tampa, FL to -66% in Portland, OR. Across all top metro areas, trips to downtown were down 44% vs last February.

Central Business Districts (CBD) are typically defined as areas with high employment, commercial and residential density. CBDs were severely and disproportionately impacted by the COVID-19 pandemic and related shutdowns. Downtown areas experienced large decreases in trips throughout the day, as working from home, restaurant, entertainment, fitness and other brick-and-mortar closures, along with limits on gatherings, had an outsized effect in the densest parts of each region.

Trips to Downtown Versus Pre-COVID (Feb 2020)

Downtown	April	September	December	Feb '21/YoY
Atlanta	-81%	-61%	-59%	-27%
Baltimore	-68%	-44%	-53%	-34%
Boston	-87%	-60%	-70%	-56%
Charlotte	-77%	-61%	-61%	-50%
Chicago	-77%	-48%	-55%	-48%
Dallas	-81%	-59%	-59%	-55%
Denver	-83%	-56%	-61%	-48%
Detroit	-91%	-64%	-77%	-59%
Houston	-80%	-64%	-59%	-54%
Los Angeles	-69%	-43%	-50%	-34%
Miami	-75%	-49%	-39%	-18%
Minneapolis	-75%	-56%	-61%	-52%
New York	-85%	-51%	-64%	-48%
Orlando	-71%	-42%	-34%	-23%
Philadelphia	-79%	-49%	-64%	-43%
Phoenix	-70%	-52%	-54%	-35%
Portland	-77%	-69%	-65%	-66%
Sacramento	-68%	-55%	-60%	-48%
San Antonio	-73%	-52%	-35%	-32%
San Diego	-69%	-41%	-52%	-26%
San Francisco	-87%	-70%	-72%	-64%
Seattle	-77%	-57%	-59%	-50%
St Louis	-76%	-49%	-52%	-28%
Tampa	-76%	-53%	-44%	-16%
Washington DC	-83%	-65%	-68%	-60%

EUROPE ANALYSIS & RANKING

European cities place amongst the slowest globally due to the vast majority of their growth occurring prior to widespread adoption of the automobile. Dense cores, narrow roads and complex road networks makes these cities ill-suited for car-based mobility. Last year's number one ranked Rome, Italy, fell to 11 due to heavy COVID-19 restrictions. New to the 2020 Scorecard include Bucharest, Zagreb, Tallinn, Vilnius and Riga – with Bucharest claiming the top spot in Europe at 134 hours of delay.

Rome saw the greatest reductions in delay compared to 2020, dropping 60%, followed by large reductions in Brussels (-58%), Dublin (-57%), Athens (-54%) and London (-53%). Other countries hit hard by COVID-19, include Portugal and Spain, also both absent from the Top 25 European list.

The emergence of Polish cities into the Top 25 comes as other countries saw much larger decreases in delay. Vehicle-miles traveled (VMT) patterns in Poland surged above pre-COVID-19 levels during summer, hitting VMT highs of more than 40% above normal. Poland remained at or above pre-COVID-19 levels throughout the year.

2020 Impact Rank (2019)	Urban Area	2020 Hours Lost	YoY Hours Lost	2020 Last Mile Speed (MPH)	YoY Last Mile Speed
1 (**)	Bucharest, Romania	134	-	15	-
2 (6)	Moscow, Russia	100	-22%	15	1%
3 (2)	Paris, France	88	-47%	13	33%
4 (**)	Zagreb, Croatia	93	-	17	-
5 (4)	St. Petersburg, Russia	74	-51%	15	11%
6 (**)	Tallinn, Estonia	88	-	20	-
7 (**)	Vilnius, Lithuania	86	-	26	-
8 (11)	Bordeaux, France	85	-32%	18	31%
9 (3)	London, U.K.	69	-53%	14	39%
10 (**)	Riga, Latvia	78	-	22	-
11 (1)	Rome, Italy	66	-60%	15	38%
12 (5)	Dublin, Ireland	66	-57%	14	41%
13 (24)	München, Germany	65	-25%	11	-6%
14 (8)	Palermo, Italy	64	-53%	11	31%
15 (7)	Brussels, Belgium	58	-58%	13	47%
16 (27)	Rostov-on-Don, Russia	58	-31%	14	7%
17 (20)	Budapest, Hungry	54	-41%	17	19%
18 (30)	Samara, Russia	55	-31%	13	12%
19 (17)	Lyon, France	54	-49%	13	29%
20 (12)	Athens, Greece	49	-54%	15	11%
21 (61)	Warsaw, Poland	49	-31%	20	25%
22 (39)	Berlin, Germany	46	-30%	16	20%
23 (56)	Wroclaw, Poland	48	-37%	16	24%
24 (60)	Kraków, Poland	48	-36%	15	18%
25 (63)	Lódz, Poland	47	-32%	20	29%

The United Kingdom

Like most other countries, the U.K. implemented various protective shutdowns and restrictions that impacted travel within the country. Vehicle miles-traveled (VMT) began to fall significantly mid-March, a week after Italy and Spain, and not to the degree seen in those countries. Additionally, U.K. VMT did not rebound as fast as either Germany, Italy or Spain, and saw the largest drop among the four countries for the last two months of the year.

On average, drivers in the U.K. lost 37 hours due to congestion in 2020, down from 115 in 2019. The result was a savings of £613 per driver over last year. Nationally, drivers saved more £3.4 billion in time savings compared to 2019.

Londoners saw large cost savings from the reduction in traffic congestion (53% drop compared to the previous year) at £613 per driver, saving the city £2.6 billion. However, Belfast drivers saved the most last year due to the 73% reduction in traffic delays, keeping £632 in their pocket.

Cardiff had both the largest decrease in average daily VMT (-30%) and the largest drop in collisions (-49%) during COVID-19.

2020 Impact Rank (2019)	Urban Area	2020 Hours Lost	YoY Hours Lost	2020 Cost Per Driver	YoY Per Driver Savings	2020 City Cost	YoY City Savings	YoY Collisions	YoY Avg. DVMT
1 (1)	London	69	-53%	£549	£613	£2.3B	£2.6B	-35%	-29%
2 (11)	Lincoln	47	-42%	£375	£265	£17M	£12M	-21%*	-27%*
3 (3)	Bristol	37	-64%	£295	£508	£76M	£131M	-34%	-27%*
4 (6)	Cardiff	34	-61%	£267	£412	£43M	£66M	-49%	-30%
5 (4)	Edinburgh	30	-69%	£241	£524	£56M	£121M	-47%	-26%
6 (25)	Guildford	34	-42%	£267	£186	£19M	£13M	-21%*	-27%*
7 (2)	Belfast	31	-73%	£241	£632	£32M	£85M	-46%	-25%
8 (8)	Southampton	31	-61%	£245	£372	£29M	£45M	-21%*	-27%*
9 (10)	Hull	31	-59%	£242	£343	£37M	£53M	-21%*	-27%*
10 (18)	Durham	34	-45%	£269	£214	£6M	£5M	-21%*	-27%*

*No local figures available, national substituted

Top 5 Worst Corridors in London

Once again, the U.K.'s entire Top 5 worst corridors are located in London, albeit with dramatic reductions in delay versus 2019. Previously, the A404/501 corridor (44 hours) held the top spot, while the top spot in 2020 was on A24, High Street Colliers Wood (24 hours).

Rank	Urban Area	Road Name	From	To	Avg. Peak Delay (mins)	2020 Hours Lost
1	London	High Street Colliers Wood	Christchurch Road	Cavendish Road	6	24
2	London	Marylebone Flyover	A501	A501 / Nelson Terrace	6	23
3	London	Harleyford Road / Kennington Oval	Kennington Park Road	South Lambeth Road	5	20
4	London	West Cross Route	Westway Roundabout	Murno Terrace	5	19
5	London	Camberwell New Road	Brixton Road	Queen's Road	4	17

Top 10 Worst Corridors in the U.K. (outside of London)

Rank	Urban Area	Road Name	From	To	Avg. Peak Delay (mins)	2020 Hours Lost
1	Edinburgh	Biggar Road	A720 Lothianburn Junction / City of Edinburgh Bypass	Brougham Street	4	15
2	Leeds	Huddersfield Road	A62 / Sunny Bank Road / Child Lane	Liversedge Hall Lane	3	14
3	Birmingham	Pershore Road	Pershore Road South / Watford Road	Belgrave Middleway	3	14
4	Manchester	Cross Street	Ashfield Road / Atkinson Road	Woodlands Road	3	12
5	Glasgow	M8	M80 Junction	M77 Junction	3	11
6	Cardiff	Caerphilly Road	North Road / A470	Wenalt Road	3	11
7	Mansfield	Derby Road	Mansfield Road	Nottingham Road	3	10
8	Manchester	Atherleigh Way	East Lancashire Road	Wigan Road	3	10
9	Manchester	Princess Parkway	Altrincham Road	Moss Lane East	3	10
10	Manchester	Princess Road	Mancunian Way	Barlow Moor Road	3	10

City Centre Travel in U.K.

Cities in the UK reacted strongly to lockdown measures. During the first UK lockdown, travel to city centres dropped 75% in April. That lockdown, lifted June 1st, led to strong rebounds in City Centre activity and a large increase in trips from April's low. However, the UK's second lockdown took effect in November and held through December 2.

By February, the UK entered its third lockdown - coinciding with new COVID-19 variants being discovered. The latest lockdown has caused a 52% retraction in trips to city centres among major cities analyzed.

City Centres are typically defined as areas with high employment, commercial and residential density. These areas were severely and disproportionately impacted by the COVID-19 pandemic and related shutdowns. Downtown areas experienced large decreases in trips throughout the day, as working from home, restaurant, entertainment, fitness and other brick-and-mortar closures, along with limits on gatherings, had an outsized effect in the densest parts of each region.

Trips to City Centres Versus Pre-COVID (Feb 2020)

City Centres	Apr	Sept	Dec	Feb '21/YOY
Leeds	-81%	-32%	-41%	-66%
Sheffield	-83%	-24%	-37%	-62%
Birmingham	-84%	-25%	-34%	-65%
London	-60%	6%	-6%	-30%
Manchester	-85%	-28%	-45%	-62%

Germany

Munich (65 hours), Berlin (46 hours), and Hamburg (33 hours) top German cities with the largest impact of traffic congestion in 2020. Congestion imposes the greatest costs on Munich's drivers at up to 585 € per year, 189 € less than 2019. On a national level, Germans lost an average of 26 hours due to congestion in 2020, costing the country 2.3 billion € or 235 € per driver. Compared to 2019, the average driver saved 20 hours, resulting in 173 € in time savings. Across Germany, the result of COVID-19 reductions in travel, resulted in more than 500 million € versus last year.

Overall, Germany saw less volatility in vehicle-miles traveled than its European counterparts, ultimately leading to comparatively lower reductions in delay. However, hours lost in Dusseldorf (27 hours) was nearly halved from last year, resulting in savings of 202 € per driver. Leipzig (-6%) and Freiburg (-14%) saw the smallest changes in delay, boosting those two cities nine spots each, to the 5th and 6th ranked urban areas in Germany. Cologne, Hanover and Frankfurt fell out of the top 10 list of most congested cities.

2020 Impact Rank (2019)	Urban Area	2020 Hours Lost	YoY Hours Lost	2020 Cost Per Driver	YoY Per Driver Savings	2020 City Cost	YoY City Savings	YoY Collisions	YoY Avg. DVMT
1 (1)	München	65	-25%	585 €	189 €	307M €	99M €	-45%	-25%
2 (2)	Berlin	46	-30%	414 €	173 €	559M €	234M €	-18%	-18%
3 (3)	Hamburg	33	-31%	297 €	130 €	195M €	85M €	-11%*	-19%
4 (7)	Nuremberg	35	-17%	315 €	59 €	58M €	11M €	-46%	-16%*
5 (14)	Leipzig	31	-6%	279 €	15 €	56M €	3M €	-19%	-14%
6 (15)	Freiburg	30	-14%	270 €	42 €	22M €	6M €	-11%*	-16%*
7 (8)	Hanover	28	-30%	252 €	104 €	48M €	20M €	-17%	-16%
8 (4)	Dusseldorf	27	-46%	243 €	202 €	54M €	45M €	-11%*	-15%
9 (9)	Bremen	27	-27%	243 €	86 €	48M €	17M €	-19%	-12%
10 (6)	Stuttgart	26	-38%	234 €	140 €	53M €	32M €	-11%*	-23%

Top 10 Worst Corridors in Germany

The worst corridors in Germany, while significantly lower than in 2019, are also more spread throughout the country. In 2019, the Top 3 most congested corridors in Germany were in Berlin, followed by two in Munich. But in 2020, Munich's Schleißheimer Straße (13 hours) and Hamburg's Erdkampsweg (12 hours) corridors edged their way into the Top 3. In 2019, the worst corridor was the B2 from Seeburger Chaussee to Hofjägerallee, with 36 hours of delay, yet this corridor completely dropped out of the top 10 by 2020. The worst corridor in Germany in 2020, the B96 from Borussiastraße to Tempelhofer Ufer had just 14 hours of delay.

Rank	Urban Area	Road Name	From	To	Avg. Peak Delay (mins)	2020 Hours Lost
1	Berlin	Tempelhofer Damm/Mehringdamm (B96)	Borussiastraße	Tempelhofer Ufer	4	14
2	Munich	Schleißheimer Straße/ Schleissheimer Straße	Detmoldstraße	Karl-Theodor-Straße / Ackermannstraße	3	13
3	Hamburg	Ratsmühlendamm/Fuhlsbüttler Straße	Ratsmühlendamm / Erdkampsweg	Hardorffsweg	3	12
4	Hamburg	B431	Heinrich-Plett-Straße / Flurstraße	Plöner Straße	3	12
5	Hamburg	B5	Tarpenbekstraße	Königstraße	3	11
6	Berlin	Seestraße/Osloer Straße	Eckernförder Platz	Grüntaler Straße	3	11
7	Hamburg	A7	HH-Eidelstedt	HH-Waltershof	3	11
8	Cologne	Aachener Straße	Bonnstraße	Militärringstraße	3	11
9	Berlin	B1/B5	Am Feldberg / Mädewalder Weg	Rosenfelder Straße	3	10
10	Hamburg	B431	Plöner Straße	Harderweg	2	10

City Centre Travel in Germany

During the first lockdown, beginning in mid-March and continuing through early May, the decline in traffic was most significant - up to 65 percent in Cologne and Munich. Trips to city centers in Germany nearly hit pre-COVID levels by September, yet pulled back by the end of the 2020.

The so-called "lockdown light" from the beginning of November and the second lockdown from mid-December initially had less of an impact, but still reduced traffic volumes by almost a third – by end of December, as trips to City Centers were down 31% overall. The decline in trips to Munich's City Center was surprisingly small, amounting to only 19 percent.

Yet by February 2021, a year before COVID-19 swept the globe, travel to downtowns remain 40% below pre-COVID levels in February 2020.

City Centres are typically defined as areas with high employment, commercial and residential density. These areas were severely and disproportionately impacted by the COVID-19 pandemic and related shutdowns. Downtown areas experienced large decreases in trips throughout the day, as working from home, restaurant, entertainment, fitness and other brick-and-mortar closures, along with limits on gatherings, had an outsized effect in the densest parts of each region.

Trips to City Centres Versus Pre-COVID (Feb 2020)

City Centres	Apr	Sept	Dec	Feb '21/YOY
Cologne	-65%	-14%	-38%	-39%
Frankfurt	-62%	-11%	-33%	-38%
Berlin	-52%	-8%	-29%	-44%
Hamburg	-60%	-10%	-33%	-32%
Munich	-65%	0%	-19%	-38%

CONCLUSION & COMMENTARY

In the transportation space, 2020 is marked by travel declines across land, sea and air. Early estimates indicate that recreational cycling may have seen an initial boost coinciding with COVID-19 government lockdowns and long-haul truck travel was interrupted but quickly rebounded, yet the vast majority of travel via automobile, bus, rail and airplane, significantly decreased.

In the U.S., while automobile travel rebounded in many metro areas, transit ridership declined in nearly every major metro, including New York (-55%), Los Angeles (-43%) and Chicago (-57%).[3] International cities, like London, saw tube ridership drop more than 65%, and bus ridership drop more than 40%, even in October and November, seven months into COVID-19.[4]

One major factor in the reduction in automobile use, and even more so for transit, is the large effect COVID-19 and related lockdowns had on downtown city centers. While regional VMT were down between 5-30% in major metro areas, trips to downtown dropped nearly 60%. Last-mile speeds, which provide insight into travel downtown, have significantly increased versus last year, providing further evidence that downtown travel is still lagging behind in the recovery.

These facts lead INRIX to believe that downtowns, the hardest hit areas by the pandemic due to the densification of people, employment, office buildings, restaurants and entertainment are going to be the last to recover during the re-emergence period, likely far into 2021 or 2022. Indeed, vaccination rates, the return to office buildings, limits on gatherings and the viability of restaurant and entertainment venues will still play a large part in whether downtowns will return to "normal" any time soon.

3. "Monthly Module Adjusted Data Release," National Transit Database, at https://www.transit.dot.gov/ntd/ntd-data.
4. "Transport use during the coronavirus (COVID-19) pandemic," GOV.UK, at https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic.

ABOUT INRIX RESEARCH

Launched in 2016, INRIX Research uses INRIX proprietary big data, analytics and industry expertise to understand the movement of people and goods around the world.

We achieve this by leveraging billions of anonymous data points every day from a diverse set of sources on all roads in countries of coverage. Our data provides a rich and fertile picture of mobility that enables INRIX Research to produce valuable and actionable insights for policy makers, transport professionals, automakers, and drivers.

INRIX Research has a team in Europe and North America, and is comprised of economists, transportation policy specialists and data scientists with backgrounds in academia, think tanks and commercial research and development groups. We have decades of experience in applying rigorous, cutting-edge methodologies to answer salient, real-world problems.

In addition to our research outputs, INRIX research reports and data are a free and valuable resource for journalists, researchers and policymakers. We are able to assist with data, analysis and expert commentary on all aspects of urban mobility and smart cities. Spokespeople are available globally for interviews.

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