



# The economic impacts of short-term rentals in Los Angeles

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# Executive summary



**This reports analyzes the economic benefits and costs of online short-term rental (STR) platforms such as Airbnb to the city of Los Angeles, across four categories: housing impacts, tax impacts, employment impacts, and other impacts. In addition to providing a brief overview of the STR market in Los Angeles, the report evaluates each of these impact categories, then offers recommendations for addressing the disparity between the negative and positive impacts of STRs on Los Angeles.**

## **SHORT-TERM RENTALS IN LOS ANGELES: MARKET OVERVIEW**

- There have been an average of **3,300 STR listings active in Los Angeles each day in 2022**. STR hosts earned \$254.7 million in the last 12 months.
- STR activity declined steeply during 2020 and 2021 because of the Covid-19 pandemic, not the City's regulatory enforcement. It has since begun to recover.
- **STR activity in Los Angeles is highly concentrated in the Venice, Downtown and Hollywood neighborhoods**, which accounted for a quarter of all listings and listings revenue in 2022.
- **In 2022, 43.1% of active listings in Los Angeles were multilistings**—listings controlled by hosts operating multiple listings—earning 47.8% of total host revenue.

- **Almost half (45.0%) of STR listings in Los Angeles are illegal**. Regulatory compliance appears to be declining.

## **STR HOUSING IMPACTS**

- **Commercial STRs have taken 2,500 homes off the long-term market in Los Angeles**, and this number is rising as the STR market recovers from the pandemic.
- **STRs have raised rents \$810 per year for the average renter household in Los Angeles**. Cumulatively, these households have paid \$3,440 more on rent since 2015.
- **STRs are responsible for more than 5,000 extra people experiencing homelessness each night in Los Angeles**. It would cost \$1.3 billion to build enough supportive housing to accommodate them, and then \$163 million each year to operate the housing.

- Hosting STRs enriches a small number of commercial operators instead of helping Los Angeles families pay the mortgage or rent. **Just 10% of hosts earn more than half (53.8%) of all STR host revenue.**

## STR TAX IMPACTS

- **The City has lost between \$56.8 and \$302.2 million in un-assessed HSO fines in the last year.** Because so much STR activity in Los Angeles is illegal, there is a vast amount of potential revenue in fines which the City is failing to collect.
- STR hosts may have failed to pay up to \$14.2 million in Transient Occupancy Tax last year.
- STR hosts may have failed to pay up to \$110.8 million in State and Federal income taxes last year.

## STR EMPLOYMENT AND WAGE IMPACTS

- The entry of STR platforms into the City of Los Angeles could be expected to have reduced

permanent employment in the hotel sector by more than 400 jobs.

- The entry of STR platforms could similarly have reduced annual wages in the hotel sector by between \$400 and \$1300 per worker.

## ADDITIONAL STR ECONOMIC IMPACTS

- **From July 2019 through August 2022, the City received 4,370 complaints about STRs.** These were concentrated in Venice, Hollywood, Hollywood Hills and Downtown, and the relative volume of complaints spiked during the pandemic.

## REGULATORY RECOMMENDATIONS

- The City should rescind the extended home share permit, close the 31-day minimum stay loophole, and do the work to get remaining STR platforms to enter into a Platform Agreement.

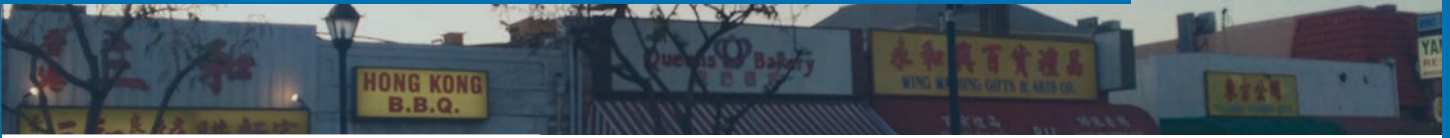


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# 1. Introduction



The City of Los Angeles is one of the most popular destinations for travellers in North America, and in the last decade has witnessed the emergence of a large short-term rental (STR) market. This market has been subject to oversight since November 2019, the City's announced date for the start of STR regulatory enforcement. The City's Home-Sharing Ordinance (HSO) restricts STRs (defined as rentals of fewer than 31 days at a time) to a host's principal residence, forbids rentals of rent-stabilized units, and limits most listings to 120 nights reserved per year.

Municipalities enact regulations such as the HSO because there is now widespread recognition that unregulated STR activity is detrimental to communities. But concerns about the negative (and positive) impacts of STRs on communities are rarely measured precisely.

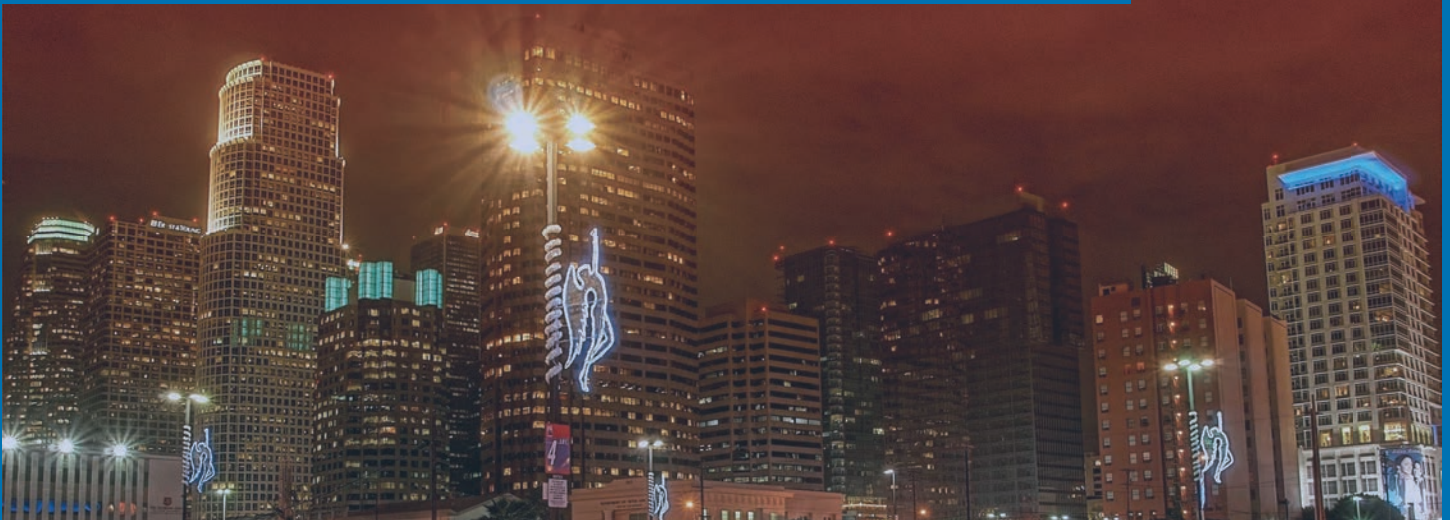
Bivens (2019), in an overview of the economic effects of STRs, identifies several major potential benefits and costs of STRs. The key potential benefits STRs could bring to local economies are 1) they could allow property owners to earn new types of revenue from their properties; and 2) they could generate additional economic activity through visitors who stay in STRs spending money in other establishments. The key potential costs STRs could bring to local economies are 1) by converting long-term housing to short-term rentals they could make housing less available and less affordable; 2) they could reduce tax revenues; 3) they could impose negative externalities, such as crime and nuisance, on neighbourhoods; and 4) they could generate a negative impact on employment by reducing

overall tourist accommodation jobs or by causing a shift from well-paid (often unionized) hotel jobs to less-well-paid (usually not unionized) intermediary accommodation service jobs.

These benefits and costs group broadly into four categories: housing impacts, tax impacts, employment impacts, and other impacts. After providing a brief overview of the STR market in Los Angeles, this report will evaluate each of these impact categories, then offer a brief set of recommendations for addressing the disparity between the negative and positive impacts of STRs on Los Angeles. The report is a complement to last year's "Short-term rentals in Los Angeles: Are the City's regulations working?" (Wachsmuth 2021a), offering a less detailed portrait of STR activity and regulatory action, but a more expansive analysis of the broader socioeconomic impacts of Los Angeles' STR market.

In brief, the report finds that, by any reasonable metric, the negative economic impacts of STRs on Los Angeles outweigh the positive ones. STRs have made long-term housing scarcer and more expensive, have exacerbated homelessness, have generated financial windfalls for a small number of commercial operators but higher costs for most Los Angelenos and for the City of Los Angeles, are responsible for millions of dollars in unpaid taxes and fines, have converted thousands of well-paid and permanent jobs into precarious and temporary ones, and have generated a wide range of neighbourhood nuisances. The report concludes with a set of policy recommendations aimed at better balancing the costs and benefits of STRs in Los Angeles.

## 2. Short-term rentals in Los Angeles: market overview



**There have been 3,300 STR listings active in Los Angeles on average each day in 2022. STR hosts earned \$254.7 million last year. STR activity declined steeply during 2020 and 2021 because of the Covid-19 pandemic, not the City’s regulatory enforcement, and has since begun to recover. STR activity in Los Angeles is highly concentrated in the Venice, Downtown and Hollywood neighborhoods, which accounted for a quarter of all listings and listings revenue in 2022. In 2022, 43.1% of active listings in Los Angeles were multilistings—listings controlled by hosts operating multiple listings—earning 47.8% of total host revenue. Almost half (45.0%) of STR listings in Los Angeles are illegal. Regulatory compliance appears to be declining.**

### **STR ACTIVITY DECLINED BECAUSE OF THE COVID PANDEMIC, NOT THE CITY’S REGULATIONS**

In 2019 there was an average of 11,840 active daily STR listings in Los Angeles operated by an average of 7,420 hosts (Figure 1).<sup>1</sup> These hosts collectively earned \$426.3 million in 2019—an

average of \$36,000 per daily active listing or \$57,500 per active host. In the midst of the Covid pandemic, active daily listings decreased to 4,450 in 2020, then to 2,780 in 2021 and 3,300 across

<sup>1</sup> Active daily listings are listings which were displayed on Airbnb or Vrbo on a given day, and were either reserved or available for a reservation. They are the most reliable means of determining the overall size of the STR market in a location, particularly with respect to change over time. These and all subsequent calculations are extrapolated from exact daily listing counts for Airbnb and Vrbo, and applied to listings on other platforms for which exact daily counts are not available. Full details are available in the Appendix.



Figure 1. Active daily STR listings in the City of Los Angeles (7-day average)

the first four months of 2022. These 3,300 listings still active on average each day in 2022 were operated by an average of 2,120 hosts, for an average revenue of \$27,600 per active listing or \$42,900 per active host in the first four months of the year.

Los Angeles STR host revenue in the last 12 months (May 2021 - April 2022) totalled \$254.7 million. There was also a daily average of 1,680 listings in 2022 which were visible on STR platforms but were blocked by the host from receiving reservations. When these inactive listings are included, the average listing has earned \$18,300 so far this year, and the average host has earned \$27,100.

Previous research (Wachsmuth 2021a) examined the decline in STR activity since 2019 and determined that the decline was caused mostly by

the Covid pandemic, as opposed to the City’s move to begin to actively enforce the HSO in November 2019. (The latter caused a one-time drop in displayed listings, as Airbnb pre-emptively removed several thousand non-compliant listings, but did not appreciably affect actual STR activity or revenue, since most of the listings removed were partially or entirely defunct.)

As of early 2021, year-over-year revenue growth once again became highly positive, and year-over-year listing growth became positive as well in early 2022 (Figure 2). Both of these indicators signal a rapid recovery underway in Los Angeles’ STR market.

Because all Los Angeles STRs are required to be licensed whether or not they are active, Figure 1 shows the total number of listings displayed each day on STR platforms, alongside active daily

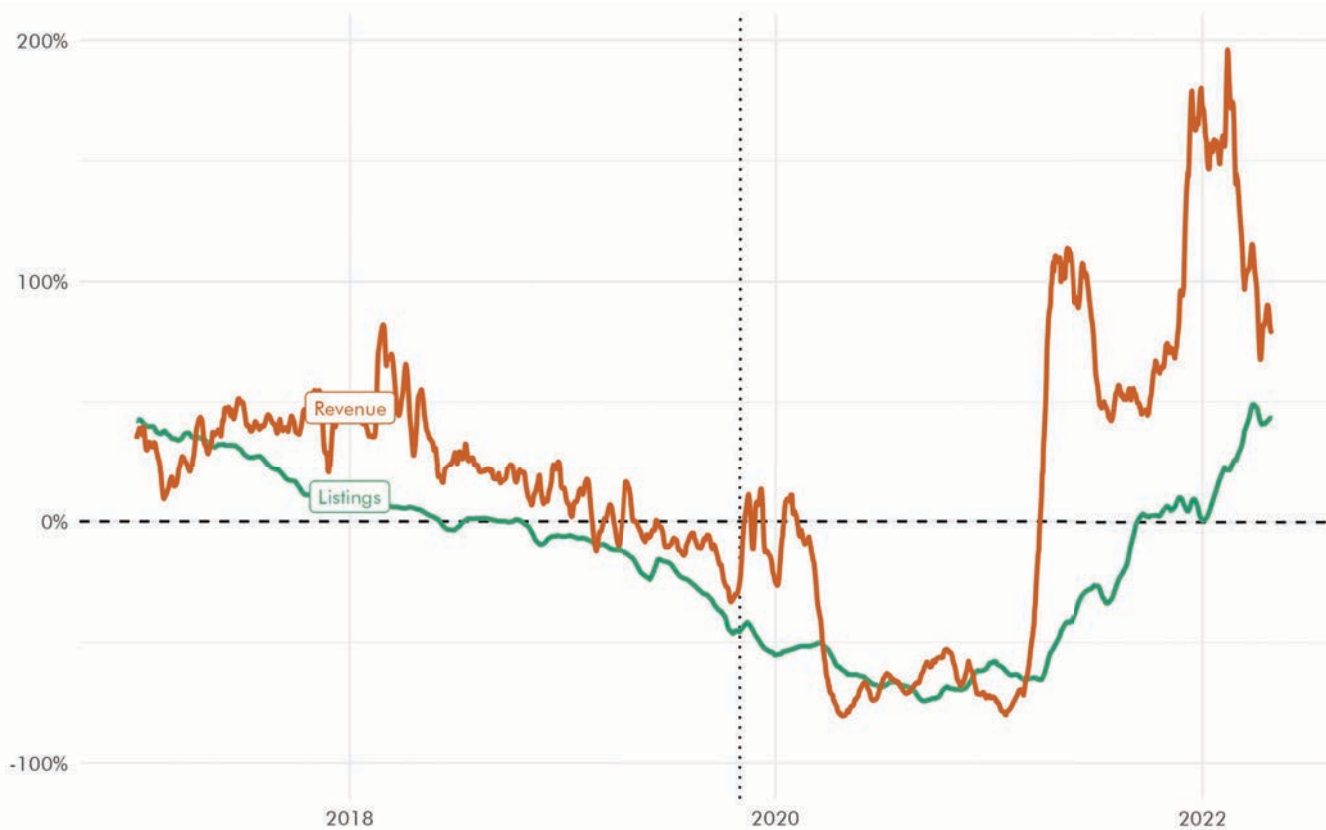


Figure 2. Change in daily active listings and host revenue compared to one year earlier (14-day average)

listings. Short-term rentals (STRs) have minimum reservations of 30 days or fewer, and are subject to the HSO, and long-term rentals (LTRs) have minimum reservations of 31 days or more, and are not subject to the City’s rules).

Figure 1 demonstrates a clear shift from “STR” to “LTR” listings on Airbnb and Vrbo. This shift has largely occurred through the imposition of 30-day minimum rental periods on Airbnb for several thousand listings in October 2019 (right before enforcement of the HSO was scheduled to begin) and in August/September 2020 (when the City gained new abilities to report unregistered listings to Airbnb).

However, even though LTR listings now outnumber STR listings in Los Angeles, the latter are still responsible for the vast majority of total platform revenue: \$91.1 million in STR revenue versus \$30.6

million in LTR revenue in the first four months of 2022. Most LTR listings on Airbnb in fact are former STR listings converted en masse by Airbnb to 30-day minimum stays because they failed to obtain a registration number from the City.

STR activity in Los Angeles is highly concentrated in the Venice, Downtown and Hollywood neighborhoods (Table 1). These three areas accounted for a quarter of all listings and listing revenue in 2022. Venice and Hollywood Hills West have by far the most STR activity when measured in per-capita terms.

In 2022, even in the face of a dramatic decrease in STR listing counts, active STR listings account for 1.5% of all of Venice’s housing units, while the equivalent figure for Hollywood Hills West is 2.5% (Figure 3). In 2019, prior to the pandemic, the respective figures were 4.7% and 5.2%.



| Neighborhood         | Active listings (2019) | Active listings (2022) | Active listings as % of dwellings (2019) | Active listings as % of dwellings (2022) | Revenue (last 12 months) |
|----------------------|------------------------|------------------------|--|--|--------------------------|
| City of Los Angeles  | 11,840                 | 3,300                  | 0.8%                                     | 0.2%                                     | \$254.7 million          |
| Venice               | 1,010                  | 330                    | 4.7%                                     | 1.5%                                     | \$32.3 million           |
| Hollywood            | 1,100                  | 190                    | 2.4%                                     | 0.4%                                     | \$10.1 million           |
| Hollywood Hills West | 380                    | 180                    | 5.2%                                     | 2.5%                                     | \$30.5 million           |
| Hollywood Hills      | 440                    | 170                    | 3.2%                                     | 1.2%                                     | \$18.9 million           |
| Downtown             | 840                    | 160                    | 2.4%                                     | 0.5%                                     | \$7.3 million            |
| Sherman Oaks         | 200                    | 90                     | 0.6%                                     | 0.3%                                     | \$7.8 million            |
| Woodland Hills       | 190                    | 90                     | 0.8%                                     | 0.4%                                     | \$6.2 million            |
| Silver Lake          | 270                    | 90                     | 1.8%                                     | 0.6%                                     | \$5.4 million            |
| Studio City          | 210                    | 80                     | 1.0%                                     | 0.4%                                     | \$6.7 million            |

Table 1. STR activity by neighborhood in Los Angeles (for neighborhoods with at least 80 active listings)

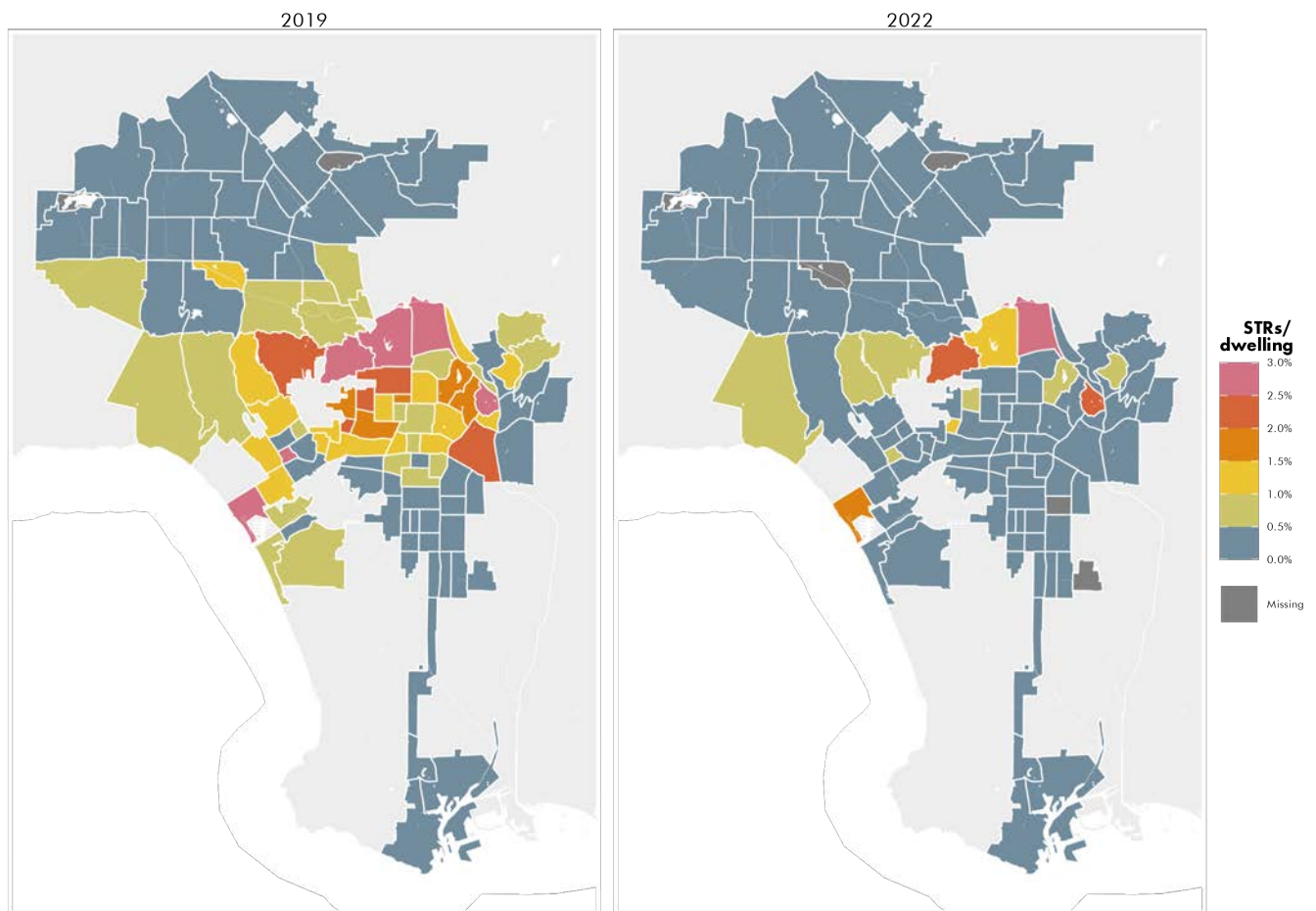


Figure 3. Active STRs as a share of all dwelling units in Los Angeles by neighborhood in 2019 (L) and 2022 (R)

## LOS ANGELES' STR MARKET IS DOMINATED BY COMMERCIAL OPERATORS, NOT HOME SHARERS

Many hosts operate multiple STR units, which strongly suggests that they are commercial operators rather than a casual home sharers. We consider entire-homes to be "multilistings" if they are operated by hosts who are simultaneously operating other entire-home listings. We define private-room multilistings as cases where a host has three or more private-room listings operating on the same day.

In 2022, 43.1% of active listings in Los Angeles were multilistings, earning 47.8% of total host revenue. Multilistings had been growing steadily since 2016, both in terms of listings and revenue percentage, until the Covid-19 pandemic, when their proportion dropped significantly (Figure 4). As of the second half of 2021, however, the

multilisting share of both listings and revenue has again begun to grow steadily, implying that commercial operators are regaining their control of Los Angeles' STR market.

(These figures should be taken as highly conservative estimates. Many commercial operators will use different STR accounts to manage their listings. Moreover, many STR commercial operators only operate a single listing, but operate it on a full-time basis. A house owner with a secondary suite, or the owner of an investment condo who operates a STR in it, are clearly commercial operators running listings which are not their principal residences, but they would not be counted by this method.)



Figure 4. The percentage of active listings and revenue accounted for by multilistings in Los Angeles (14-day average)

## ALMOST HALF OF LOS ANGELES' STR LISTINGS ARE ILLEGAL

In order to be operating legally, an STR listing in Los Angeles must 1) be registered with the City, and 2) must be operated in line with a set of restrictions, notably a principal residence requirement and in most cases an annual limit of 120 nights of reservations. In data shared by the City in September 2022, there were 3,718 properties with valid registrations under the HSO. 2,498 of these properties had standard licenses, while the other 1,220 had extended home sharing licenses. In August 2022, we estimate that there were 4,610 listings displayed on STR platforms in Los Angeles. While precisely determining the legality of every individual STR listing would require extensive inspections and investigation, a close estimate can be obtained by identifying: listings operating with a missing, fake, or invalid HSO permit; listings which are not approved for "extended home sharing" but are in fact rented more than 120 nights per year; listings which are likely to be violating the principal-residence requirement of the HSO because they are multilistings or because they are reserved an extremely high number of nights per year.

We begin by identifying registered listings. A registered listing is not necessarily legal (since it might be operating in a non-compliant fashion despite having a license), but an unregistered one is necessarily illegal. In August 2022, 1.0% of Airbnb STR listings declared an exemption from registration, and we assume that they are operating legally. But 16.0% of listings had no license number whatsoever. Just under half of these listings (46.6% of the total) have displayed locations on Airbnb very near the City border, so it is possible that they are in fact located in neighboring cities and not subject to the City's

regulations. If we assume that this is true in all possible cases, and further optimistically assume that registration rates are as high on non-Airbnb platforms (which generally do not display registration numbers) as on Airbnb, then approximately 394 STR listings operating in Los Angeles (8.6% of the total) do not have a license and do not have a declared exemption to licensing, and therefore are operating illegally.

Of the listings which have a registration number displayed, 26.5% were displaying an expired number or a demonstrably fake number (because it does not appear among the valid permit numbers released by the City). 7.7% were booked for at least 120 nights last year despite not having an extended home sharing permit. A further 11.3% have an extended home sharing permit but were booked for at least 240 nights last year, which makes it highly implausible that they could have served as a host's principal residence. And then 5.4% of listings were entire-home multilistings (i.e. controlled by a host with multiple entire-home listings) which is not permitted by the HSO. In total, therefore, we believe that fully 50.9% of listings with a displayed license number are likely to be operating illegally.

Combining the unlicensed and the licensed-but-illegal listings, we conclude that 2,070 (45.0%) of Los Angeles' 4,610 STR listings are illegal, nearly three years since the City claims to have begun actively enforcing its laws. These results are a substantial deterioration from our previous finding that slightly more than a third of STR listings were illegal in summer 2021, which suggests that STR hosts are increasingly willing to flout the HSO in the face of insufficient regulatory enforcement.



### 3. STR housing impacts



**Commercial STRs have taken 2,500 homes off the long-term market in Los Angeles, and this number is rising as the STR market recovers from the pandemic. STRs have raised rents \$810 per year for the average renter household in Los Angeles. Cumulatively, these households have paid \$3,440 more on rent since 2015. STRs are responsible for more than 5,000 extra people experiencing homelessness each night in Los Angeles. It would cost \$1.3 billion to build enough supportive housing to accommodate them, and then \$163 million each year to operate the housing. Hosting STRs enriches a small number of commercial operators instead of helping Los Angeles families pay the mortgage or rent. Just 10% of hosts earn more than half (53.8%) of all STR host revenue.**

A large body of research has evaluated the impacts of STRs on local housing markets (e.g. Barron et al. 2020; Garcia-López et al. 2019; Horn and Merante 2017; Li et al. 2022; Wachsmuth and Weisler 2018). The main findings of this research are that STRs make housing both less available and less affordable for local residents. This occurs because dedicated commercial STRs displace either existing or potential long-term residents; each apartment unit or house that is operating as a full-time STR is one fewer housing unit that can be occupied by a long-term resident. The resultant

decrease in housing supply makes housing harder to find for residents, and consequently drives up housing prices.

Airbnb itself, along with some academic research, touts the potential positive housing impacts of STRs by suggesting that the income that STR hosts earn can help middle-class families with their own housing affordability problems (Airbnb 2018; Li et al. 2021). In this section we evaluate the possibility of both positive and negative housing-market impacts of STRs in Los Angeles.

## COMMERCIAL STRS HAVE TAKEN THOUSANDS OF HOMES OFF THE LONG-TERM MARKET IN LOS ANGELES

One of the major considerations when gauging the impacts of short-term rentals on a city is the extent to which STRs are removing long-term housing from the market. To obtain the exact number of units that have been occupied as STRs, landlords or units would need to be individually surveyed, which is infeasible because STR hosts are mostly anonymous on major STR platforms such as Airbnb and Vrbo. Instead, we use the daily activity of listings, alongside structural characteristics such as listing type and location, to estimate which listings are operating as dedicated STRs and are therefore not available as conventional long-term housing.

*Frequently Rented Entire-Home (FREH) listings:* The number of frequently-rented units is one way to estimate STR-induced housing loss. If a STR is available for reservations the majority of the year and receives many bookings, it is reasonable to assume that it is not serving as an individual's principal residence at the same time. Along these lines, we define frequently rented entire-home (FREH) listings as entire-home listings which were available on Airbnb or Vrbo the majority of the year (at least 183 nights) and were booked a minimum of 90 nights. We then apply a statistical model (described in the appendix) to the FREH data in order to generate an estimate of FREH activity based on three months of listing activity.

*Ghost hostels:* In addition to FREH listings, it is possible that entire housing units have been subdivided into multiple private-room listings, each of which appearing to be a spare bedroom or the like, while actually collectively representing an apartment removed from the long-term housing market. We call these clusters of private-room listings "ghost hostels", and detect them by finding clusters of three or more private-room listings operated by a single host, whose reported

locations are close enough to each other that they are likely to have originated in the same actual housing unit. (Airbnb and Vrbo obfuscate listing locations by shifting them randomly up to 200 m.)

In September 2019, before the City began to enforce the HSO, there were 5,860 FREH listings in the City of Los Angeles, and 650 more housing units which were operating as ghost hostels. In total, therefore, short-term rentals were removing 6,510 housing units from Los Angeles' long-term market (Figure 5).

Airbnb's removal of several thousand non-compliant listings magnified the usual seasonal decline in STR-induced housing somewhat over the next several months, as did the conversion of a number of STR listings to 30-day minimum stays, but on the eve of the pandemic there were still 4,570 housing units being operated as dedicated short-term rentals. This figure plummeted during the pandemic, and after bottoming out at 1,510 in March 2021, it has begun to increase again. In the last year dedicated STRs increased by nearly two thirds, and as of April 2022 2,500 housing units are being operated as dedicated STRs.

The 2,500 housing units taken off of Los Angeles' housing market by STRs at the moment is only 0.2% of the total amount of housing in the city, but this housing loss has been concentrated in a small part of the city.

Table 2 summarizes STR-induced housing loss by neighborhood, and shows a tale of two cities: in most of Los Angeles, there are relatively few dedicated STRs, while in Venice and the central city they are ubiquitous. In April 2019, 3.7% of all housing units in Venice were operating as dedicated STRs, and that number was still 1.2% in April 2022, despite the pandemic.

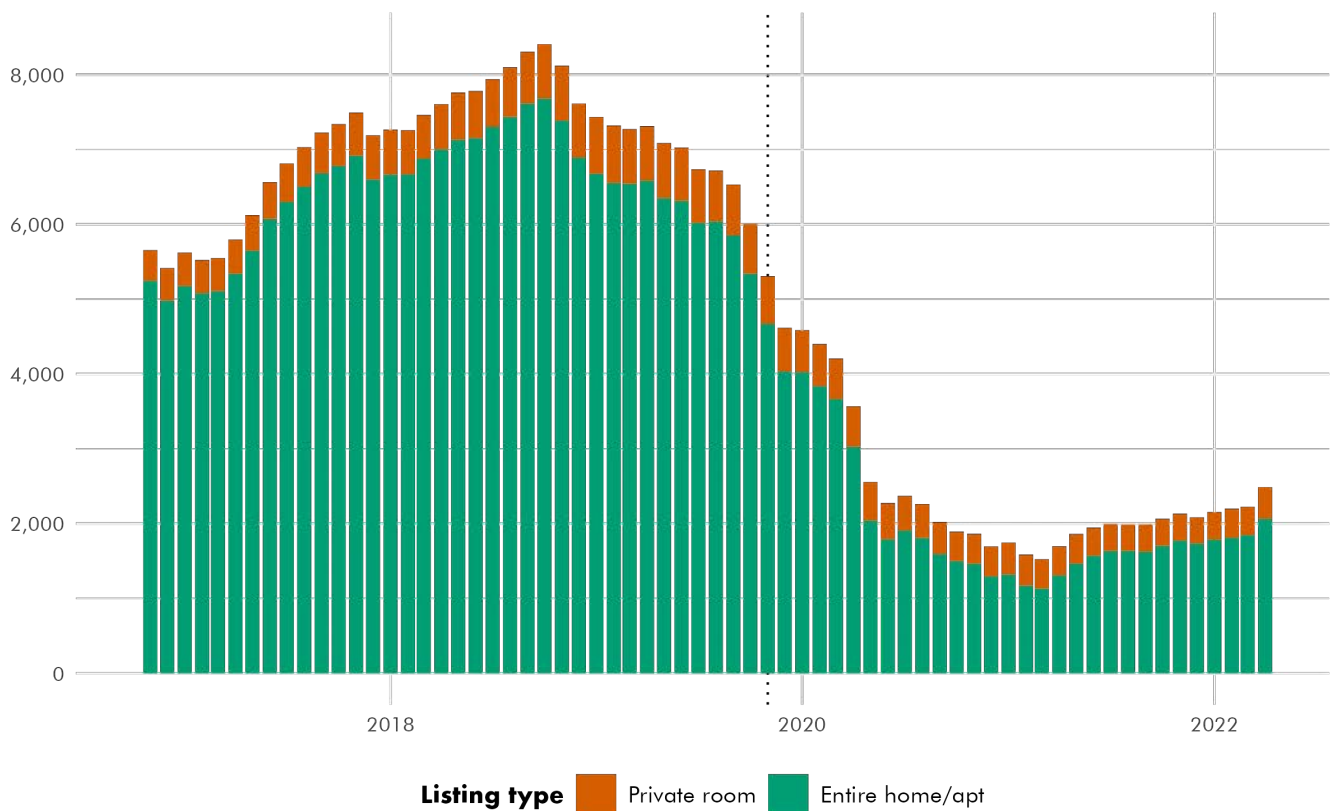


Figure 5. Housing units converted to dedicated STRs in the City of Los Angeles (monthly average)

| Neighborhood         | Housing loss (April 2019) | Housing loss (April 2022) | % of housing lost (April 2019) | % of housing lost (April 2022) |
|----------------------|---------------------------|---------------------------|--------------------------------|--------------------------------|
| City of Los Angeles  | 7,320                     | 2,500                     | 0.5%                           | 0.2%                           |
| Venice               | 780                       | 260                       | 3.6%                           | 1.2%                           |
| Sherman Oaks         | 90                        | 150                       | 0.3%                           | 0.4%                           |
| Hollywood Hills      | 300                       | 140                       | 2.2%                           | 1.0%                           |
| Hollywood            | 840                       | 120                       | 1.9%                           | 0.3%                           |
| Hollywood Hills West | 180                       | 110                       | 2.4%                           | 1.5%                           |
| Downtown             | 590                       | 100                       | 1.6%                           | 0.3%                           |
| East Hollywood       | 180                       | 90                        | 0.7%                           | 0.4%                           |
| Silver Lake          | 210                       | 90                        | 1.4%                           | 0.6%                           |

Table 2. STR-induced housing loss by neighborhood in the City of Los Angeles (for neighborhoods with at least 90 housing units lost)

## **STRS HAVE RAISED RENTS \$810 PER YEAR FOR THE AVERAGE RENTER HOUSEHOLD IN LOS ANGELES**

What impact do STRs have on residential rents? STRs could plausibly affect rents in the long-term housing market through two channels. On the one hand, if housing units which otherwise could house residents are converted into tourist accommodations, this will shrink the size of the local rental market, which, in the face of constant demand, will result in higher rents. Second, by offering a new revenue stream to homeowners and potentially some tenants who are willing to become part-time home sharers, STRs can increase the economic value of residential properties. Both phenomena would be expected to increase housing costs and rents, since there is less available housing stock, and since the economic potential of the existing stock is increased.

A recent study evaluated the impact of STR growth on housing prices and rents using an analysis of STR listings across the United States from 2012 to 2016 (Barron et al. 2020). The researchers found that a 1% growth in the number of STR listings predicts a 0.018% increase in monthly rents and 0.026% increase in house prices. While these numbers may seem small, they were multiplied by STR listing growth rates, which had been quite

high over the study period. This model was developed to account for a wide range of locations, so we are able to apply the average values of their model to Los Angeles zip codes to obtain a rough estimate of the impact which STR growth has had on residential rents.

Between 2015 and 2022, we estimate that STRs have been responsible for a 2.4% increase in the average monthly rent in the median Los Angeles zip code. Put differently, from 2015 to 2022, the average renter household in the median Los Angeles zip code is now paying an extra \$67 each month in rent—\$810 per year—because of the impact of STRs on the housing market. Cumulatively, this average renter household has paid \$3,440 more on rent since 2015.

For a small number of Los Angelenos, these extra thousands of dollars in housing costs have been more than offset by the windfalls they have earned from operating commercial short-term rentals (which we discuss below). But for the vast majority of Los Angeles households, STRs have made housing harder to find and more expensive to afford, with no compensation of any kind.

## **STRS ARE RESPONSIBLE FOR MORE THAN 5,000 EXTRA PEOPLE EXPERIENCING HOMELESSNESS EACH NIGHT IN LOS ANGELES. IT WOULD COST \$1.3 BILLION TO BUILD ENOUGH SUPPORTIVE HOUSING TO ACCOMMODATE THEM, AND THEN \$163 MILLION EACH YEAR TO OPERATE THE HOUSING.**

The extra \$3,440 that the average Los Angeles renter household has paid on rent since 2015 because of the presence of commercial STRs in the city is by itself a major negative impact on the economic stability and quality of life of Los Angeles families. But for families who were previously living close to the limit of their ability to afford housing, it is possible that the STR-induced

increase in housing costs could have forced them onto the streets.

In fact, a variety of studies have demonstrated that increases in the cost of living in a city will also increase homelessness rates (GAO 2020; Glynn et al. 2021). This relationship is a simple consequence of the fact that people who are living

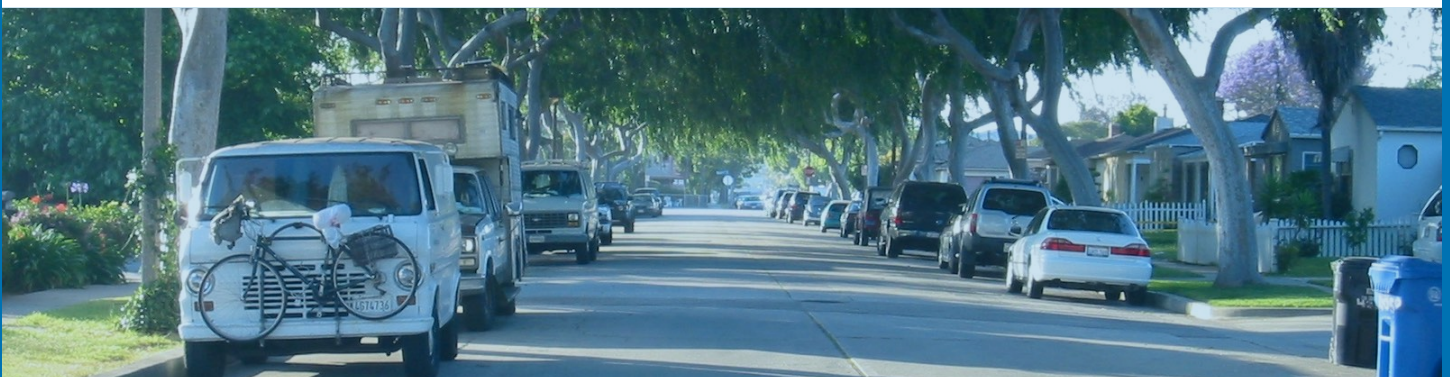
at the margins of homelessness may well be pushed into homelessness if their ability to pay rent does not keep up with the rent they are required to pay. Since STRs have been proven to increase housing costs by facilitating the removal of housing from the long-term market, it follows that the existence of STRs in a city also plays a role in the rate of homelessness experienced by that city.

A model developed by Glynn et al. (2021) specifically predicts that any community where the cost of the median rental apartment is more than 22% of the median income will begin to see homelessness increase, and that when this rent-to-income ratio exceeds 32%, homelessness will explode. This model, when applied to the case of Los Angeles, suggests that a 2% increase in the rent-to-income ratio will translate into 4,230 additional people experiencing homelessness in the city. For reference, there are approximately 50,000 people experiencing homelessness in Los Angeles each night (National Alliance to End Homelessness 2022).

We demonstrated above that STR activity in Los Angeles has caused average rents to increase by 2.4% since 2014. Glynn et al.'s (2021) model thus implies that STR activity is responsible for 5,020 more people experiencing homelessness each night in Los Angeles than would have been the case if there were no STR activity in the city. In the absence of STRs driving up housing costs in Los Angeles, by contrast, homelessness could be close to 10% lower in the city.

While these 5,020 people experiencing homelessness are a human tragedy on their own, there is an additional associated economic cost, since the City of Los Angeles and the State of California both spend large amounts of money each year on homelessness services. The City's 2022 budget included approximately \$1 billion in spending on homelessness. Since STR activity is responsible for approximately 10% of the homelessness in Los Angeles, this implies that the City might be paying \$100 million more money on homelessness services than it would have had to in the absence of this STR-caused homelessness.

The annual cost of providing supportive housing is approximately \$32,500 per bed in the United States (Culhane and An 2021). It would thus cost the City of Los Angeles approximately \$163 million each year to operate adequate supportive housing for each person who is homeless because of the presence of commercial STRs in the city. While this cost is already incredibly high—for example, it is equal to approximately two thirds of all the revenue earned by STR hosts in Los Angeles in 2021—it pales in comparison of the cost of actually constructing sufficient units of supportive housing for the Los Angelenos experiencing homelessness because of STR activity in the city. The average cost of building a unit of supportive housing in Los Angeles is \$531,000 (Holland 2020). Under the conservative assumption that the 5,020 additional people experiencing homelessness in Los Angeles live in families with an average size of two people, it would thus cost \$1.3 billion to construct adequate supportive housing to address the homelessness problems caused by STRs in Los Angeles.





## HOSTING STRS ENRICHES A SMALL NUMBER OF COMMERCIAL OPERATORS INSTEAD OF HELPING LOS ANGELES FAMILIES PAY THE MORTGAGE OR RENT

While the negative economic impacts of STRs on Los Angeles's housing market are distributed widely across the city—ultimately contributing to higher rents paid by every rental household—there is the question of how the positive economic impacts enter the city's housing market. Are STRs a tool to help the middle class with housing affordability problems, or a means for a small number of property owners to get richer at the expense of middle-class housing affordability? The evidence suggests that they are the latter.

The major beneficiary of hosting STRs is a small number of commercial operators, who earn a majority of revenue on STR platforms, instead of

Los Angeles families engaging in home sharing, who are relatively numerous but who earn very little revenue.

A crucial distinction is that between casual STRs ("home-sharing") and dedicated STRs ("commercial operations"). If the STR market in Los Angeles is mostly home sharing listings operated in a host's own home, then it is plausible to conclude that STRs could have significant positive economic impacts by helping these hosts with their own housing expenses. But if the STR market is mostly commercial operations which are not home sharing, then this conclusion does not hold.

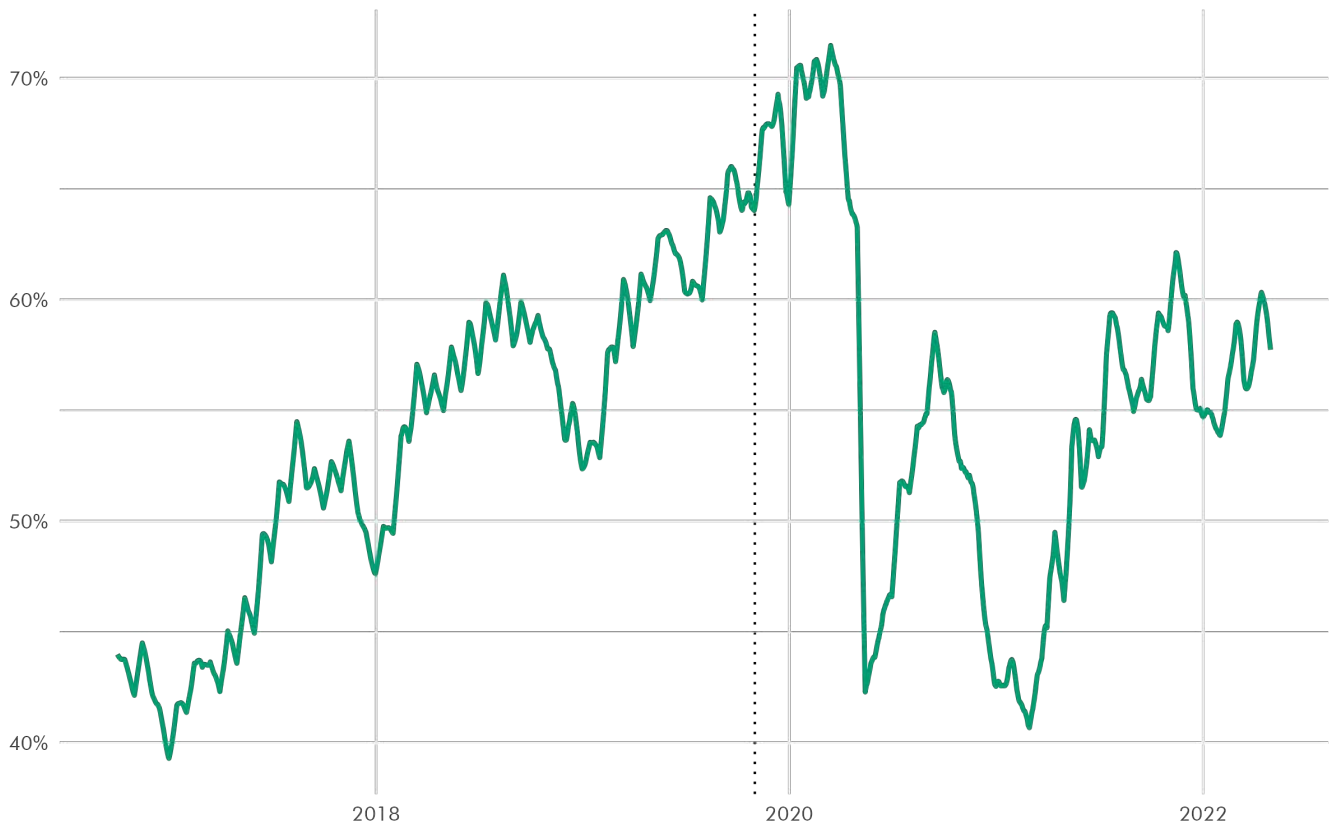


Figure 6. The percentage of active entire-home STR listings contributing to housing loss each day in Los Angeles (14-day average)

Figure 6 shows the percentage of active entire-home listings which have been operated as dedicated STRs since 2017. Prior to the pandemic, home sharing was on its way to vanishing in Los Angeles. In early 2020 more than 70% of entire-home listings were run as commercial operations. The pandemic caused a collapse and several fluctuations in these numbers as listings have exited and re-entered the market, but commercial operations have been recovering fast since the start of 2021. As of April 2022, 60% of entire-home listings were operated as dedicated STRs.

Another way to measure inequality in the STR market is to examine the distribution of revenue among STR hosts. Is revenue widely distributed between many part-time hosts of single listings, or concentrated among a small number of commercial operators who control many full-time

listings? Among all the STR hosts who earned revenue in Los Angeles last year (May 2021 - April 2022), the median revenue was \$26,000, while there were 39 hosts or that earned more than \$500,000.

Figure 7 shows the percentage of the total \$254.7 million in STR revenue in the last year which accrued to each decile of hosts. The most successful 10% of hosts earned more than half (53.8%) of all STR revenue. The revenue concentration is even steeper among the top 10%: the top 5% earned 40.6% of revenue, while the top 1% of hosts earned 20.1% of all revenue.

The evidence thus suggests that the economic benefits of STRs do not primarily flow to casual home sharers, but rather to a small number of large commercial STR operators.

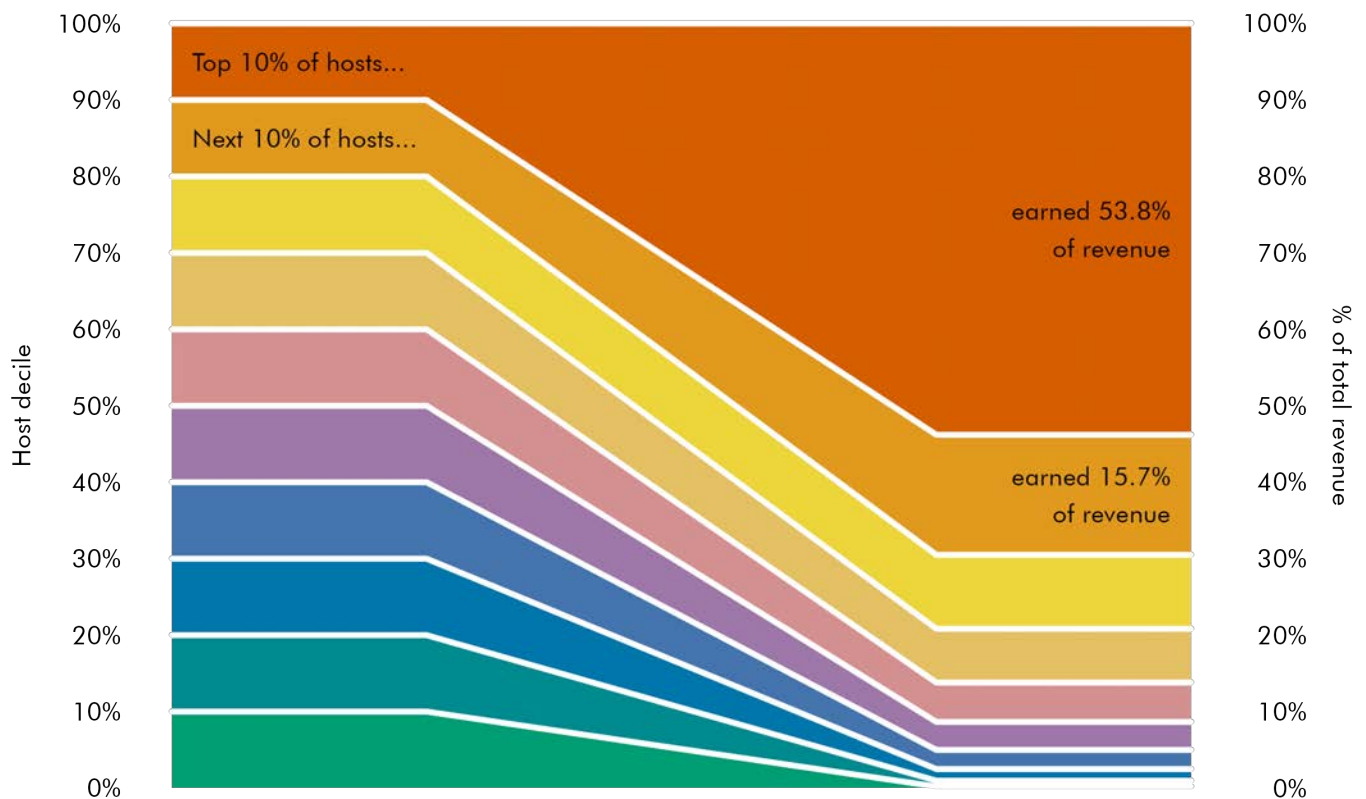


Figure 7. STR host revenue distribution in the City of Los Angeles (May 2021 - April 2022)

## 4. STR tax impacts



**The City has lost between \$56.8 and \$302.2 million in un-assessed HSO fines in the last year. Because so much STR activity in Los Angeles is illegal, there is a vast amount of potential revenue in fines which the City is failing to collect. STR hosts may have failed to pay up to \$14.2 million in Transient Occupancy Tax last year. STR hosts may have failed to pay up to \$110.8 million in State and Federal income taxes last year.**

### **THE CITY HAS LOST BETWEEN \$56.8 AND \$302.2 MILLION IN UN-ASSESSED HSO FINES IN THE LAST YEAR**

The HSO mandates a fine of \$527.28 (or the nightly rate if that is higher) per day for hosts who advertise an STR which violates HSO regulations, and a fine of \$2,109.12 per day for each night a non-extended-home-sharing STR is reserved beyond the 120-day annual limit. Using the previous analysis of illegal STR operations, we can establish plausible estimates of the fines which the City could be levying, and then compare those estimates to the actual fines which have been levied.

From March 2021 to April 2022, there were 1,780 listings advertised which had a missing, fake, invalid or expired permit number, or which are highly unlikely to be a principle residence because they were rented in excess of 240 nights in the year. These listings were advertised for an average of 275 days each, for a total of 477,200 days. At the prescribed fine level of \$527.28 per day, this means that the City could have levied a total of \$251.6 million in fines last year. If the City only started fining

hosts after an incredibly generous six months of warnings, they would still have been able to levy \$106.5 million in fines for improperly advertised listings. If the City only fined hosts a single day a week, the figure would still have been \$35.9 million.

The second, larger fine type is for non-extended-home-sharing listings rented for more than 120 nights per year. Our estimate is that 296 listings violated this aspect of the HSO, for an average of 81 additional nights per listing or 24,000 total nights. At the prescribed fine level of \$2,109.12 per day, this would be \$50.6 million in fines last year. If the City only started fining hosts after they reached 180 days, they would still have been able to levy \$20.9 million in fines for hosts violating the 120-day limit on STR reservations.

In total, therefore, the City could have levied between \$56.8 and \$302.2 million in fines last year, depending on how strictly they enforced the HSO. By

contrast, information from the City suggests that, between November 2021 and August 2022 (slightly less than a year) they only actually levied \$36,500 in fines. This is only \$18 per host who we believe violated the HSO last year—a trivial amount that is highly unlikely to deter any wrongdoing.

The inescapable conclusion is that lax enforcement of the HSO is costing the City of Los Angeles an enormous amount of money and, at the same time, implicitly offering bad actors free rein to operate illegal commercial STRs with impunity.

## **STR HOSTS MAY HAVE FAILED TO PAY UP TO \$14.2 MILLION IN TRANSIENT OCCUPANCY TAX LAST YEAR**

The City of Los Angeles requires all STR bookings to be charged a Transient Occupancy Tax (TOT) of 14% of the listing price, inclusive of cleaning fees. But currently only Airbnb has agreed to collect and remit this tax as part of the booking process. All of the other platforms operating in Los Angeles do not collect the TOT, so it is up to each individual host to collect this tax from each of their guests and then pass it along to the City.

While there are no doubt some hosts who perform these responsibilities diligently, two facts suggest that many or most hosts do not. First, the non-Airbnb STR platforms do not provide any mechanism for hosts to charge the TOT to guests, so hosts will have to undertake a separate, non-platform-mediated transaction with their guests to obtain the TOT. For hosts to collect TOT on

their own is thus likely to be quite cumbersome. Second, the City has no way of reliably tracking the number of reservations and the price per reservation associated with STR bookings. This means that the penalties for hosts who fail to collect and remit TOT are highly likely to be non-existent.

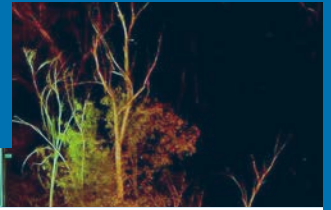
The combination of these facts suggests that only a small fraction of the revenue generated on non-Airbnb STR platforms is properly taxed through the TOT. We estimate that \$101.3 million (49.0%) of the total \$206.5 million in annual STR host revenue earned in 2021 was earned on non-Airbnb platforms. This revenue should have generated \$14.2 million in TOT revenue for the City of Los Angeles, but it is likely that very little of that revenue was ever collected or remitted.

## **STR HOSTS MAY HAVE FAILED TO PAY UP TO \$110.8 MILLION IN STATE AND FEDERAL INCOME TAXES LAST YEAR**

A similar tax remittance issue exists for State and Federal income taxes. STR hosts are required to pay income tax on their revenues, but neither Airbnb nor the other online STR platforms remit revenue information to federal or state governments, as would be commonplace with more traditional employer-to-employee relationships. Since there is no oversight of STR earnings from any levels of government, it is likely that many hosts fail to pay the income taxes they are responsible for.

STR hosts earned \$206.5 million in Los Angeles in 2021. Under the most conservative possible assumptions (i.e. that this was the only taxable revenue each host earned that year), hosts should pay \$28.9 million in California income tax and \$81.9 in Federal income tax for the year. This is a combined \$110.8 million in tax liability. The true amount owed will certainly be higher, while the true amount paid will certainly be much lower.

## 5. STR employment and wage impacts



**The entry of STR platforms into the City of Los Angeles could be expected to have reduced permanent employment in the hotel sector by more than 400 jobs. The entry of STR platforms could similarly have reduced annual wages in the hotel sector by between \$400 and \$1,300 per worker.**

Much of the growth of STRs has come at the expense of hotels. A plausible prospect, therefore, is that one of the economic impacts of STRs on Los Angeles has been a redistribution of economic activity—in terms of jobs and wages—away from the hotel sector and into the STR sector. Since hotel jobs are more likely to be unionized, full-time and well paid than STR jobs (in particular cleaning and key management services), this redistribution could imply a degradation of overall employment conditions in the broader hospitality sector.

A wide variety of studies has found that the presence of STRs negatively affects the economic performance of hotels (Yang et al. 2021; Dogru et al. 2020a). Research into the specific impacts of STRs on hotel employment, however, has been more sparse, and more mixed. Fang et al. (2016) argue that the growth of STRs will replace paid hotel jobs with unpaid STR host labour, and thus

will reduce hotel employment. By contrast, Dogru et al. 2020b found that greater presence of STRs predicts greater overall employment in the tourism sector, although this study did not distinguish between high-wage, unionized hotel employment and low-wage, non-unionized STR employment.

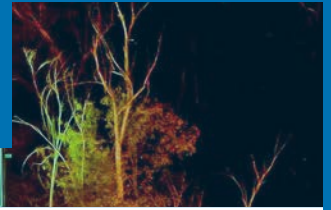
Mhlanga (2020), by contrast, does distinguish between these employment categories, and finds that the entry of Airbnb into a market caused a small statistically significant decline in permanent hotel jobs and a decrease in hotel wages, accompanied by a statistically insignificant increase in temporary employment and self-employment. The study suggests that the decline of permanent employment in the hotel sector could be in the range of 8% of all jobs thanks to the entry of Airbnb. Likewise, Suci (2016) finds that the daily wages of hotel workers in cities with high presence of STRs are reduced by between 2% and 6%.

**STR PLATFORMS MAY HAVE REDUCED PERMANENT EMPLOYMENT IN THE HOTEL SECTOR BY MORE THAN 400 JOBS, AND ANNUAL WAGES IN THE HOTEL SECTOR BY UP TO \$1,300 PER WORKER.**

While it is not possible to obtain precise employment figures for the hotel industry in the City of Los Angeles, LAEDC (2013) conducted an occupational analysis of Los Angeles County through 2017 which provides plausible estimates. According to this analysis, there were 9,500 cleaning staff and 3,900 hotel desk clerks employed in Los Angeles County,

with median earnings of \$21,500 and \$22,400 respectively. Extrapolating from previous research, the entry of STR platforms into the City of Los Angeles could be expected to have reduced permanent employment in the hotel sector by more than 400 jobs, and annual wages by between \$400 and \$1,300 per worker in the sector.

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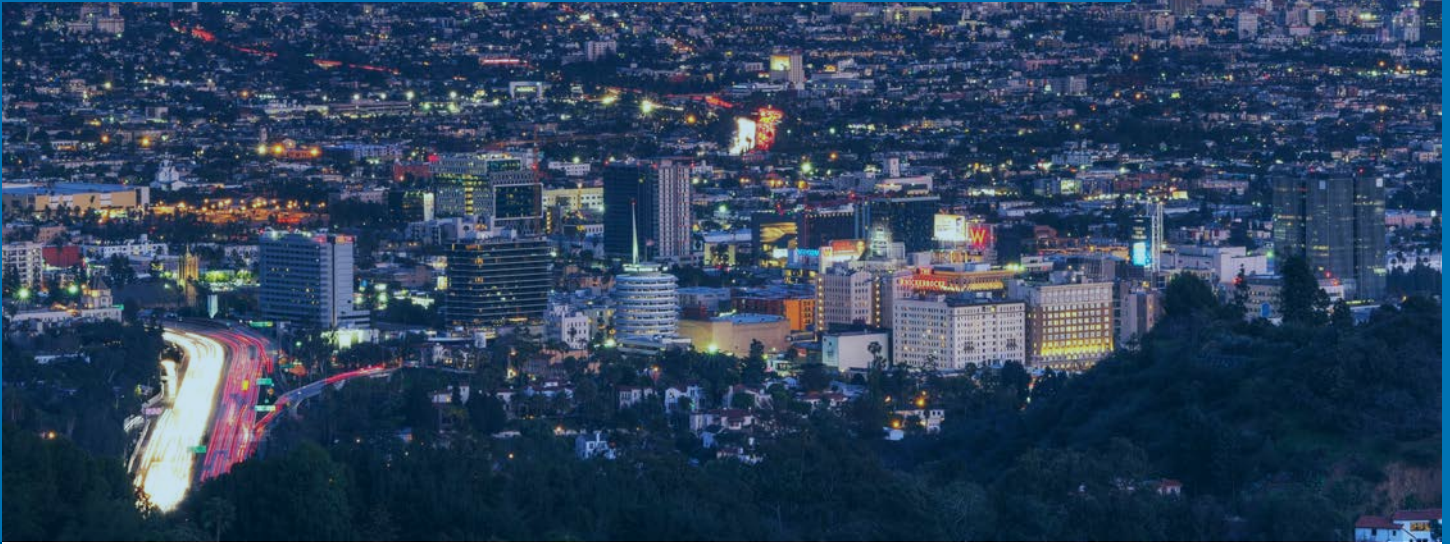
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## 6. Additional STR economic impacts



**From July 2019 through August 2022, the City received 4,370 complaints about STRs. These were concentrated in Venice, Hollywood, Hollywood Hills and Downtown, and the relative volume of complaints spiked during the pandemic.**

In contrast to the housing, tax and employment domains, there are set of other potential economic impacts of STRs on Los Angeles which are less easily quantifiable. Based on previous research (e.g. Jordan and Moore 2018; Füller and Michel 2014; García-Hernández et al. 2017; Lamba Llop 2017; Freytag and Bauder 2018), the most important category of these impacts is likely to be what economists call “negative externalities” at the neighborhood scale. Negative externalities are harmful byproducts of an activity, the costs of which are not borne by whoever is carrying out the activity. In the case of STRs, the most frequently cited negative externality is neighborhood-level nuisance, usually related to noise, garbage or crime.

The City of Los Angeles maintains a hotline for residents to make complaints related to STR activity in the city, and the volume of complaints received suggests that nuisance issues are indeed

significant. From July 2019 through August 2022, 4,370 complaints were received by the City.

Figure 8 shows their distribution by neighborhood (left panel) and their frequency relative to overall STR activity (right panel), and indicates that complaints about STRs were heavily concentrated in Venice, Hollywood, Hollywood Hills and Downtown, and that complaints spiked during the pandemic. Complaints were between 4 and 7 times as common—relative to the size of the STR market—from spring 2020 through summer 2021 as they were in summer 2019.

There are other possible externalities—both positive and negative—which STRs generate at the neighborhood scale which are hard to quantify in Los Angeles due to data limitations. For example, there is the prospect that the presence of STRs drives new tourist spending in neighborhoods which previously had not received significant

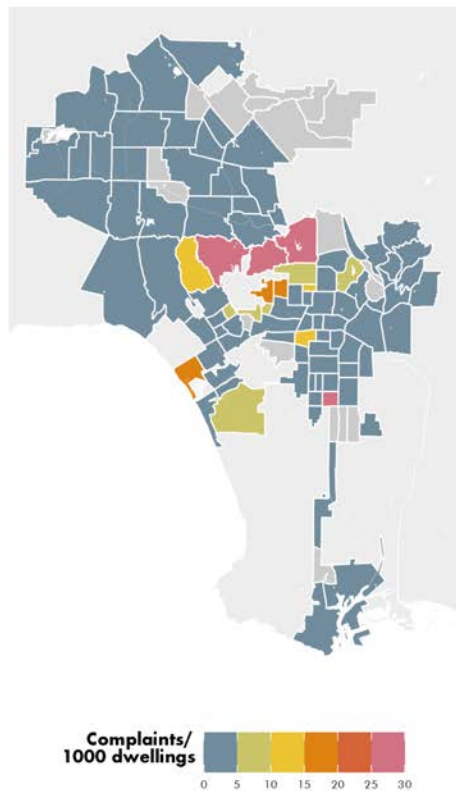


Figure 8. STR complaints received by the City of Los Angeles, per 1000 dwelling units (left) and per active daily STR listing (right) (July 2019 - April 2022)

tourist flows. Existing research implies that these impacts are modest, however; while Basuroy et al. 2022 and Xu and Xu 2021 find that STR growth predicts better restaurant performance in a neighborhood, Alyakoob and Rahman (2022) find that these positive impacts do not occur in Black neighborhoods.

Another important potential neighborhood externality is crime. And indeed Ke et al. (2021) find, in a study of Boston, that more STR listings in

a neighborhood predicts subsequent higher crime rates.

While it is not feasible to measure these externalities precisely in Los Angeles, this previous research suggests that the presence of STRs in Los Angeles is responsible both for somewhat better restaurant performance—particularly in white neighborhoods—and somewhat higher levels of crime in the neighborhoods where STRs are most prevalent.





## 7. Regulatory recommendations



### **The City should rescind the extended home share permit, close the 31-day minimum stay loophole, and do the work to get remaining STR platforms to enter into a Platform Agreement.**

The most important distinction within the STR market for analyzing both the positive and negative economic impacts of STRs is the distinction between commercial STR operators and actual home sharers. The negative economic impacts of STRs—housing loss and homelessness, tax evasion, job loss, and negative neighbourhood externalities—are disproportionately caused by

commercial STRs. Meanwhile, the positive economic impacts of STRs—in particular the revenue which hosts can earn—are more meaningful when they are more broadly distributed among a larger number of small-scale STR hosts who are sharing their own homes rather than a smaller number of large-scale commercial STR operations.

#### **THE CITY SHOULD RESCIND THE EXTENDED HOME SHARE PERMIT**

While the City of Los Angeles limits most STRs to 120 nights per year in a host's principal residence, it also has an "extended home sharing" option which allows hosts to bypass these limits. There is no public-interest rationale for the existence of the extended home sharing option,

which simply redirects STR activity away from the relatively benign home sharing type to the unambiguously harmful commercial type. Accordingly, the City should rescind the extended home sharing option, and strictly limit STRs to 120 nights in a host's principal residence.

#### **THE CITY SHOULD CLOSE THE 31-DAY MINIMUM STAY LOOPHOLE**

Second, the City should ensure that hosts (and platforms) are unable to use long minimum-stay requirements on STR platforms as a loophole to avoid the need to register their listings. Because

many STR regulations define short-term rentals based on a length of stay, some jurisdictions have had mandatory registration requirements frustrated by Airbnb failing to remove unregistered listings and

instead converting them to 30-day minimum stays. While this change nearly respects the letter of the law,<sup>1</sup> it undermines the key function of a mandatory registration system, which is to comprehensively identify STRs so that rules can be fairly applied to them. The hosts of these newly long-term listings are able to use Airbnb and other STR platforms to advertise their listings while they continue to accept reservations of any length of time offline, and the City will be unable to plausibly monitor this activity if the 31-day-minimum loophole exists.

The consequence is that, if the HSO continues to define STRs with reference to a maximum length of stay, the City will be unable to properly enforce its rules and illegal activity will proliferate on STR platforms.

The simplest way to avoid this loophole is to have the HSO's registration requirement unconnected with any length of stay, and simply to adhere to listings which are advertised on online STR platforms. A small number of legitimate longer-term rentals operating on these platforms will potentially be required to register when they wouldn't otherwise have had to, but this is a small price to pay to ensure that the HSO captures all short-term rental activity in Los Angeles.

This change could be accomplished by re-defining the category of activity being regulated to refer to the means of a property's rental as opposed to

the length of its rental. Registration should be mandatory for all properties which are rented on online platforms such as Airbnb and Vrbo, which not only display listings on behalf of hosts but also perform nearly all the mediation between hosts and guests, including collecting and processing payments, handling disputes, and policing the behaviour of both hosts and guests. Rental agreements on these platforms are rarely if ever formalized through a lease.

By contrast, registration should not be required for properties advertised on other online platforms which simply allow for the advertisement of properties but do not perform any important mediation function between landlords and tenants. Prominent examples of this type of platform are Craigslist and Facebook Marketplace. Prospective tenants use these platforms to identify possible apartments, but all the business of concluding a tenancy arrangement are conducted directly between the parties. These rental agreements are usually formalized through a lease.

Making this distinction the basis of STR regulations will remove the incentives for hosts or platforms to reclassify listings with 31-day minimums to avoid the need to register. By contrast, any distinction based on a maximum length of stay will create precisely this type of incentive, and the City's recent experience has proven that this incentive will be turned into a loophole, and the loophole will be exploited.

## **THE CITY SHOULD DO THE WORK TO GET REMAINING STR PLATFORMS TO ENTER INTO A PLATFORM AGREEMENT**

Finally, the City should exert the necessary pressure on the vast majority of STR platforms which have not entered into an agreement with the City to be accountable for enforcing the HSO on its users. Only Airbnb has entered into such an agreement, and

while it is responsible for the majority of STR activity in Los Angeles, the fact that other STR platforms are allowed to operate with impunity in the face of the law undermines both the effectiveness of the HSO and the principle of fairness.

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<sup>1</sup> As discussed above, Airbnb shifted non-registered listings to 30-day minimums when in fact listings should have 31-day minimums to be exempt from the HSO.

## Appendix. Data and methodology



The analysis in this report is based on a combination of private and public data sources:

- **Listing and activity data about Airbnb and Vrbo short-term rental listings gathered by the consulting firm AirDNA.** This data includes canonical information about every short-term rental listing on the Airbnb and Vrbo (including HomeAway) platforms which was active in the City of Los Angeles between January 1, 2015 and April 30, 2022. The data includes “structural” information such as the listing type, the number of bedrooms, and the approximate location of the listing. AirDNA collects this information through frequent web scrapes of the public Airbnb and Vrbo websites. The data also includes estimates of listing activity (was the listing reserved, available, or blocked, and what was the nightly price?), which AirDNA produces by applying a machine-learning model to the publicly available calendar information of each listing. We use this data for our core analysis of the STR market, including our counts of active listings, our breakdown of different listing types, our estimates of STR-induced housing loss, and our estimates of listings which are commercial operations and which are located in hosts’ principal residences.
- **Additional data about Airbnb listings collected by UPGo researchers.** This includes HSO permit numbers which were gathered in August and September 2022.
- **Data from the American Community Survey.** We use this governmental data to analyze population and dwelling counts.
- **Rent data from Zillow.** We use this to measure the impact of STRs on rents in Los Angeles.

*Data cleaning:* We process the raw STR data we receive from AirDNA through an extensive data cleaning pipeline, the code for which is available at <https://github.com/UPGo-McGill/strr> (Wachsmuth 2021b).

*Listing extrapolation:* Our STR calculations are extrapolated from exact daily listing counts for Airbnb and Vrbo, and applied to listings on other platforms for which exact daily counts are not available. Because these other platforms have disproportionately evaded regulatory scrutiny, they have become an increasingly large share of total STR activity in Los Angeles following the implementation of the City's STR regulations. In previous work (Wachsmuth 2021), 90.4% of STR listings present in Los Angeles in the summer of 2021 were listed on Airbnb or Vrbo, and 9.6% of listings were only listed on one of the other platforms. We assume that the non-Airbnb/Vrbo share of listings has grown logarithmically from 1% when HSO enforcement began. We likewise model the share of listing activity for listings cross-listed between Airbnb and another platform by extrapolating from the known relationship between Airbnb and Vrbo within our dataset. We use the formula  $y = 0.142 + 0.108x - 0.03x^2$  to model this

relationship, where  $x$  is a numeric representation of the date and  $y$  is the scaling factor.

*FREH modelling:* We define "frequently rented entire-home listings" as entire-home STR listings which are available for a majority of the year (so 183 days or more in a 365-day period), and which are reserved at least 90 days of that year. This is a consistent and conservative way to estimate listings operated sufficiently often that they are unlikely to be their host's principal residence. But this indicator is slow to adapt to sudden shocks in STR activity, so we developed a linear regression model which predicts FREH status based on three months of listing activity instead of a full year, and which is calibrated both to routine seasonal variation and to a given market's specific dynamics. All of the FREH results reported here are the results of this model rather than the raw FREH calculations themselves.

In order to facilitate public understanding and scrutiny of our work, complete methodological details, along with all the code used to produce this analysis, are freely available under an MIT license on the UPGo GitHub page at <https://github.com/UPGo-McGill/la-report-2022>.



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## **ABOUT UPGO**

UPGo, the Urban Politics and Governance research group at McGill University, conducts rigorous, public-interest research into pressing urban governance problems—particularly those that exceed or challenge city boundaries. UPGo has published numerous peer-reviewed journal articles and policy reports on short-term rentals in cities around the world, including “The high cost of short-term rentals in New York City” and “Short-term rentals in Canada: Uneven growth, uneven impacts”. UPGo is led by Prof. David Wachsmuth, the Canada Research Chair in Urban Governance at McGill University’s School of Urban Planning, and is online at [upgo.lab.mcgill.ca](http://upgo.lab.mcgill.ca).



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