

EXHIBIT F

CITY AND COUNTY OF SAN FRANCISCO

BOARD OF SUPERVISORS

BUDGET AND LEGISLATIVE ANALYST

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Policy Analysis Report

To: Supervisor Campos
From: Budget and Legislative Analyst's Office
Re: Short-Term Rentals 2016 Update
Date: April 7, 2016



Summary of Requested Action

Your office requested that the Budget and Legislative Analyst prepare a report that estimates the number of units being used as short-term rentals in San Francisco, review transient occupancy tax collection for short-term rentals, and evaluates the existing enforcement process and the ability of the City to audit transient occupancy tax payments. This report will also include a comparison of the number of Airbnb listings estimated in the 2015 Short-Term Rentals report with current number of listings on Airbnb and other hosting platforms in San Francisco.

For further information about this report, contact Fred Brousseau at the Budget and Legislative Analyst's Office.

Executive Summary

- Effective February 2015, new laws went into effect in the City and County of San Francisco (City) regulating short-term rentals, defined as rentals of housing units or rooms for less than 30 days. Prior to that, short-term rental of residential units was illegal in San Francisco though the practice had become common, facilitated by online hosting platforms such as Airbnb, VRBO, Homeaway, Flipkey, and Craigslist.
- As of November 2015, an independent webscrape of just Airbnb's website identified 7,029 short-term rental listings, or 15 percent more than the 6,113 listings reported eleven months prior in December 2014 in a similar webscrape. The 7,029 listings were posted by 5,378 unique hosts.
- Of the total listings in November 2015, 4,033, or 57.4 percent of the 7,029 total listings, were for unhosted entire homes, which for the most part are subject to a rental cap of 90 nights per year under City regulations.¹

¹ The Budget and Legislative Analyst used entire home listings as an estimate for unhosted rentals, or rentals subject to the 90 night per year cap in current City law, as these are the most clear cases where hosts would not be present and is the best proxy for unhosted units available at this time.

Key Statistics:

7,029

Total number of Airbnb listings as of November 2015

5,378

Number of unique Airbnb hosts as of November 2015

15%

Percent increase in Airbnb listings (December 2014 to November 2015)

1,082

Total number of short-term rental registration applications submitted to the City as of November 2015, or 20% of estimated unique hosts listing on Airbnb alone that month. As of March 2016, 1,647 applications had been submitted to the City.

285

Estimated number of entire unit Airbnb listings booked more than 90 nights per year between February and November 2015.

322

Number of enforcement cases pursued by Office of Short-Term Rentals as of March 2016.

79

No. of notices of violations issued by City as of end-February 2016

\$680,000

Amount of fines issued for short-term rental violations as of end-February 2016

- Since the City's short-term rental laws went into effect, all hosts offering rooms or entire homes for short-term rent are now required to register with the City and meet certain requirements such as maintaining a business registration certificate and liability insurance. Short-term rental hosts must also report the number of nights they rent their unit each quarter to the City's Office of Short-Term Rentals (OSTR). OSTR is a unit of the Planning Department created in July 2015 that is responsible for enforcing the City's short-term rental regulations.

- **Most short-term rental hosts are out of compliance.** As of November 2015, OSTR had received 1,082 registration applications. While this represents an increase from the 579 registered hosts as of May 2015, it suggests that there may still be up to 4,296, or 79.9 percent of the 5,378 unique Airbnb hosts listed on Airbnb in November 2015, out of compliance with City law requiring short-term rental hosts to register with the City. Since Airbnb is only one of several hosting platforms operating in the City, the number of hosts out of compliance is likely higher.

In data released just prior to completion of this report, Airbnb reported 9,448 listings on their platform and 7,046 unique hosts in March 2016. During the same period, OSTR had received 1,647 registration applications, indicating there may be up to 5,399 hosts, or 76.6 percent of all unique hosts, out of compliance with the City's registration requirement.

- **Since February 2015, an estimated 285, or 26.1 percent of unhosted entire home listings, appear to have been rented for more than 90 nights, in violation of the 90-night cap.** Under current regulations, residents may rent their homes on a short-term basis for a maximum of 90 unhosted nights per year, and for an unlimited number of hosted nights. Of the estimated 1,094 Airbnb listings that first posted in February 2015 or after, approximately 285, or 26.1 percent, are estimated by the Budget and Legislative Analyst to have been rented as entire homes for more than 90 nights between February 2015 and November 2015.² These 285 listings were managed by 261 unique hosts and had a median of 180 rental nights during this period.

- **Because there are an unknown number of duplicate listings on the various hosting platforms, it is not possible to estimate the total number of unique listings across hosting platforms in San Francisco.** Simply adding the total number of listings on each platform would include duplicates as hosts can list their short-term rentals on multiple hosting platforms. As of early March 2016, VRBO had 1,793 listings in San

² The Budget and Legislative Analyst's Office used the 72 percent review rate cited by Brian Chesky, Co-Founder and CEO of Airbnb, and the average short-term stay of 5.1 nights, as estimated by SF Travel, to estimate the number of nights booked per year.

San Francisco, while Homeaway had 1,774 listings and Flipkey had 896 listings as of the end of March 2016.

- **Enforcement of February 2015 Legislation.** OSTR's strategy in its initial year of operations has been to first ensure that eligible residents are registered, and then to shift more focus to enforcement. To achieve this, OSTR provides information about City regulations on its website, has conducted events to educate the public on short-term rental regulations and has extended business hours to make it more convenient for residents to access the information they need. OSTR also pursued 322 enforcement cases, which resulted in 79 notices of violations and \$680,000 in assessed penalties as of the writing of this report.
- **Hosting platforms do not provide information about their hosts to OSTR to aid in enforcement.** The lack of data from online hosting platforms on short-term rental hosts and activity in San Francisco creates significant barriers to enforcing the existing regulations. For example, hosting platforms do not report hosts listing on their platforms that do not have required registration numbers or report the number of hosts renting out their units unhosted for more than 90 nights per year. There are no penalties for hosting platforms listing rentals that are not in compliance with City laws.
- **Enforcement cases have mainly been driven by resident complaints.** Though OSTR does not track the total number of complaints received, it does estimate that approximately 92.2 percent of its 322 enforcement cases active since February 2015, or 297 cases, were generated by complaints (274) or referrals (23) from other City departments. However, OSTR has new strategies to proactively identify non-compliant hosts. OSTR now analyzes webscrapes to identify residents in violation of existing regulations. OSTR is also building in-house capacity to conduct independent webscrapes of online hosting platform websites.
- **Limited Information on Transient Occupancy Tax Collection from Short-term Rental Hosts.** The Treasurer & Tax Collector's Office reported that they have issued over 1,500 business registration certificates to short-term residential rental hosts or hosting platforms. The Treasurer & Tax Collector reports they are developing an approach to providing aggregate information about short-term residential rental transient occupancy taxes paid by short-term rental hosts.
- The Treasurer & Tax Collector's Office states they conduct audits of any business in San Francisco that they have reason to believe are not paying their due taxes, but could not provide specific information on whether any short-term rental hosts have been audited since the City's regulations went into effect.
- The Treasurer & Tax Collector's Office reports that they are now sharing business registration information with OSTR to help identify short-term rental hosts. OSTR plans to use this data to identify short-term rental hosts who may be out of compliance with City laws. Based on provisions of the City's Business and Tax Regulations Code, the Budget and Legislative Analyst believes that a

similar effort to confidentially share transient occupancy tax data between the two offices may be possible and could further assist OSTR's enforcement efforts. However, the Treasurer and Tax Collector's Office disagrees that the pertinent Code sections allow for such data sharing and has stated the Office's practice for many years has only been to share transient occupancy tax data with other taxing agencies.

Policy Options

To enhance compliance with the City's short-term rental laws, the Board of Supervisors could consider the following:

1. Amend existing law to expand the role of online hosting platforms in compliance efforts.
2. Improve reporting and accountability measures for transient occupancy tax collection as one means of gauging short-term rental activity in the City.
3. Request a report back to the Board of Supervisors on possible increased collaboration and data-sharing between the Office of Short-Term Rentals and the Treasurer & Tax Collector in the interest of improved enforcement tools.
4. Simplify the short-term rental registration process as the existing system might deter otherwise compliant short-term rental hosts.

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TABLE OF CONTENTS

Section Title	Page Number
Executive Summary	1
Background.....	6
New Local Regulations for Short-Term Residential Rentals	6
2015 BLA Report Findings on the Impact of Short-Term Rentals on Housing	7
Purpose of 2016 Short-Term Rentals Update Report.....	8
Short-Term Rental Listings in San Francisco	8
Airbnb Listing Trends in November 2015	9
Data Limitations of Webscrapes	12
Short-Term Rental Listings Data Reported by Hosting Platforms	13
Total Short-Term Rental Listings in San Francisco	14
Compliance with February 2015 Legislation.....	14
Compliance Efforts of Online Hosting Platforms	15
Enforcement of Registration Requirements.....	16
Short-Term Rental Registration Statistics.....	17
Office of Short-Term Rentals Public Awareness Efforts	18
Registration Process	19
Enforcement Strategies & Results	20
Collection of Transient Occupancy Tax from Short-Term Rental Hosts.....	22
Policy Options.....	25
Appendix I. Methodology	28

Background

The short-term rental industry in San Francisco and elsewhere has expanded significantly in recent years with the introduction of online hosting platforms such as Airbnb, Homeaway, Flipkey, Craigslist, and VRBO. Through these new services, San Francisco residents can earn income previously unavailable to them by renting out their primary homes, spare rooms, and vacation properties for short-term stays. Staying in private residences has become increasingly popular with travelers interested in alternatives to staying in hotels.

New Local Regulations for Short-Term Residential Rentals

In October 2014, the Board of Supervisors passed legislation that took effect in February 2015 to regulate the use of short-term rentals in San Francisco.³ The goals of the legislation were (1) to provide an exception to the then prohibition on all short-term rentals, and (2) to establish the authority and procedures for the regulation of short-term rentals. Prior to the 2015 ordinance, short-term rentals, defined as rentals of residential units for less than 30 days, were not allowed in San Francisco though rental of such properties had become a common practice in San Francisco and elsewhere.

Effective February 2015, short-term residential rentals in San Francisco became legal for permanent residents, defined as natural persons occupying a residential unit for at least 60 consecutive days, with the intent of establishing that unit as his or her primary residence. Through the ordinance, such residents were now allowed to rent their residences on a short-term basis unhosted for a maximum of 90 nights each year. A limit was not set for permanent residents to rent out rooms or a portion of their homes for hosted stays, which is when hosts are present during the rental stay. The legislation established that a permanent resident could be an owner or a lessee but could only have one permanent residence.

The February 2015 legislation, which was codified through amendments to the Administrative Code, required that short-term residential rentals be regulated by the Planning Department. This delegation of authority was further refined in July 2015 through adoption of an ordinance by the Board of Supervisors creating the Office of Short-Term Rentals (OSTR) within the Planning Department, which was made responsible for timely and efficient short-term rental regulation.⁴

Upon its creation, OSTR became responsible for ensuring that all short-term rental hosts comply with the following regulations: (1) registering with the City, (2) being permanent residents of the units being rented, (3) obtaining a business registration certificate from the Treasurer & Tax Collector prior to registering with the City, (4) posting their City-issued short-term rental registration number on

³ Ordinance No. 218-14, codified in Administrative Code Sections 37.9(a) and 41.A.

⁴ The Planning Department processed short-term rental registration applications from February 2015 until the launch of OSTR.

any hosting platform where they offer their unit for short-term rent, (5) maintaining \$500,000 or more in liability insurance for their short-term rental unit, and (6) providing a quarterly report to OSTR on the number of nights their unit is rented.

The short-term rental legislation authorized OSTR to conduct investigations and issue fines to hosts found to be out of compliance with City regulations. Further details on the role of OSTR are provided in subsequent sections of this report.

The adopted legislation required that hosting platforms inform their users of the requirements of the ordinance, which include the specific requirements for short-term residential rental registration and transient occupancy tax obligations. The legislation also states that hosting platforms are liable for collecting and remitting all required transient occupancy taxes and are not relieved of these obligations when their users are not in full compliance. The legislation does not relieve hosting platforms of liability if a host fails to fulfill transient occupancy tax obligations.

2015 BLA Report Findings on the Impact of Short-Term Rentals on Housing

Though short-term rentals under 30 days were illegal prior to the February 2015 legislation, the Budget and Legislative Analyst identified 6,113 Airbnb listings in San Francisco as of December 2014 in a May 2015 report.⁵ Listing data for Airbnb was obtained through webscrapes prepared by independent analysts.⁶

Of the 6,113 Airbnb listings in December 2014, 3,651, or 59.7 percent, were for entire unit listings. 2,196 were for private room listings, while the remaining 266 listings were for shared rooms.

Airbnb listings could be found in almost every neighborhood in December 2014 but the highest number of listings was found in the Inner Mission, Haight-Ashbury/Western Addition, Castro/Eureka Valley, and Russian Hill/Polk Gulch neighborhoods.

The Budget and Legislative Analyst concluded in its May 2015 report that enforcement of the City's short-term rental laws that went into effect in February 2015 had been hampered by the City's lack of information about the location and number of bookings for each short-term rental listing. Since short-term rentals operate in private residences without any commercial signage posted and hosting platform companies do not disclose addresses or booking information about their hosts, the City had limited information for enforcement. To address these limitations, the report included a number of policy options for the Board of Supervisors to consider, including (i) requiring that hosting platforms share

⁵ [Analysis of the Impact of Short-Term Rentals on Housing](#), Budget and Legislative Analyst, prepared for Supervisor Campos. May 2015.

⁶ After reviewing webscrape data from three independent technology professionals, the Budget and Legislative Analyst's Office used webscrapes completed by Murray Cox to evaluate short-term rentals advertised on Airbnb. A webscrape is a technique used to extract and compile information from public websites.

location and booking activity information about their hosts on a quarterly basis, (ii) requiring that online hosting platforms only list hosts who are registered with the City, (iii) consider limiting the number of unhosted nights allowed per year to a number other than 90, consistent with the Board of Supervisors' policy goals; and (iv) amending City codes to allow the Planning Department to levy fines against hosting platforms that list unregistered hosts.

Proposition F, a measure to tighten restrictions on short-term rentals to 75 nights per year, was on the City's November 2015 ballot. This measure included enforcement tools to ensure that hosts paid the total transient occupancy taxes due to the City. Proposition F would have also outlawed renting in-law units on a short-term basis and would have required hosting platforms to report the location and booking activity of their short-term rental hosts in San Francisco. Proposition F was defeated and was not implemented.

Purpose of 2016 Short-Term Rentals Update Report

This report provides an overview of how the prevalence of short-term rentals has changed over the past year in San Francisco and provides details on how the February 2015 legislation is being enforced in terms of short-term rental registration, compliance with the 90-night limit, business registration certificates, and transient occupancy tax collection.

Short-Term Rental Listings in San Francisco

Both the number of short-term rentals and online hosting platforms serving San Francisco has increased since the Budget and Legislative Analyst's 2015 report on the topic. The number of listings below is for Airbnb only because there is credible available data from independent sources on the number and characteristics of that hosting platform's listings. Further, Airbnb is a major competitor in the short-term rental industry and appears to have the majority of listings. In this report, listings are defined as any advertisement that can be found on a hosting platform, whether for a private room, a shared room, or an entire house. Each host can have one or more listings on an online hosting platform for the same housing unit; it can be listed as an entire house or unit, or as one or more private or shared rooms, depending on whether or not the host will be present. Hosts can also list the same unit on multiple platforms.

Airbnb and Tripadvisor, which is Flipkey's parent company, voluntarily provided listing data to the Budget and Legislative Analyst just prior to the completion of this report. That data is presented in the *Short-Term Rental Listings Data Reported by Hosting Platforms* report section below.

Because the data from the November 2015 Airbnb webscrape was more detailed and allowed for preparation of estimates of the number of booked nights per host, this report contains both the webscrape data, and our associated estimates, and the Airbnb and Flipkey data.

The Airbnb-provided data was as of March 15, 2016 and shows growth in the total number of listings compared to the November 2015 webscrape. However, measures such as the proportion of entire units rented relative to the total number of listings as well as the number of unique hosts compared to total listings are proportionally similar between the two datasets, lending credence to the independently prepared webscrape.

Airbnb Listing Trends in November 2015

To estimate the number of Airbnb listings available, the Budget and Legislative Analyst used data provided by Murray Cox, the founder of Inside Airbnb. A webscrape is a technique used to extract and compile data from websites beyond what is visible to the public. Mr. Cox analyzes publicly available information about a city's Airbnb listings through webscrapes and publishes his findings on the Inside Airbnb website.

Mr. Cox shared the original data collected from his December 2014 and November 2015 webscrapes with the Budget and Legislative Analyst's Office. The Airbnb statistics included in this report are based on those two webscrapes.

The number of short-term rental listings available on Airbnb increased by 15 percent from 6,113 in December 2014 to 7,029 in November 2015, as shown in Exhibits 1 and 2 below. While there were greater rates of increase in shared rooms and private rooms for rent between the two webscrapes, the majority of listings continued to be for entire units in November 2015, as they were in December 2014. The total number of listings, number of listings by type, and number of unique hosts as of December 2014 and November 2015 are presented in Exhibit 1. The unique host count eliminates duplicate listings by a host for the same property, which may be listed as an unhosted entire unit for some nights and a hosted private room available for other nights.

Exhibit 1. Number of Airbnb Short-Term Rental Listings in San Francisco

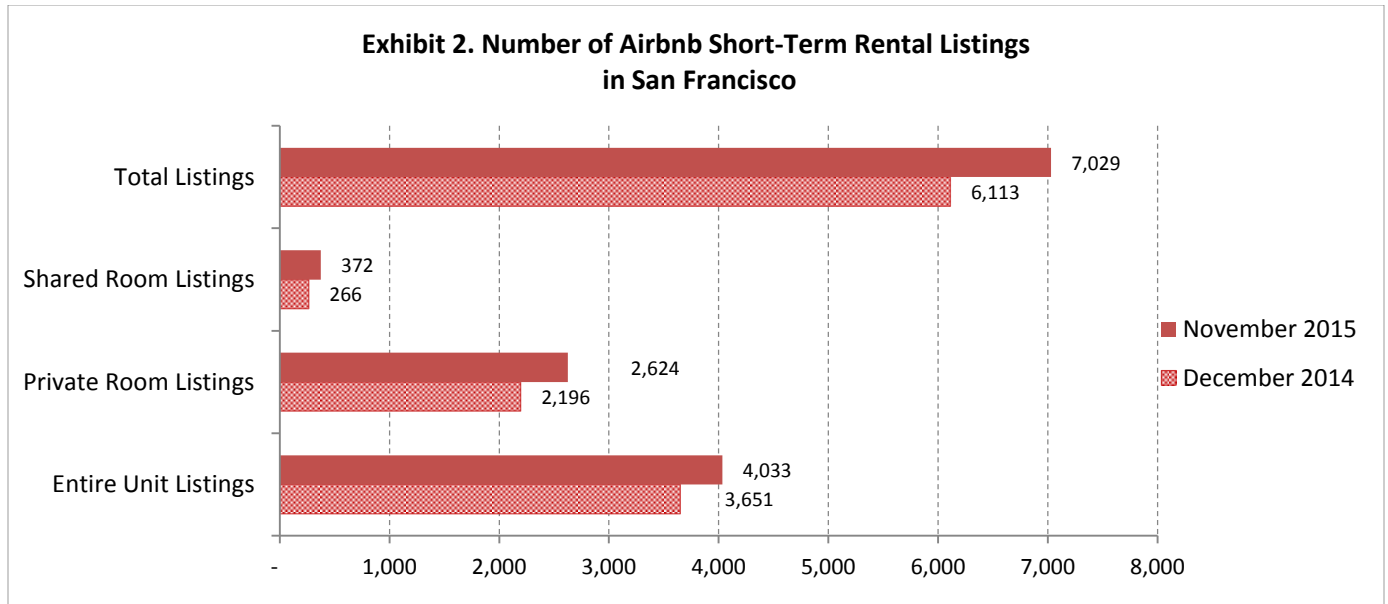
	December 2014	November 2015	Percent Change
No. of Entire Unit Listings	3,651	4,033	10.5%
No. of Private Room Listings	2,196	2,624	19.4%
No. of Shared Room Listings	266	372	39.8%
Total No. of Airbnb Listings	6,113	7,029	15.0%
No. of Unique Hosts	4,815	5,378	11.7%

Source: December 2014 and November 2015 webscrapes completed by Murray Cox, for Inside Airbnb (www.insideairbnb.com).

The number of unique hosts, or individuals with Airbnb accounts, also increased between December 2014 and November 2015. Approximately 5,378 unique hosts were responsible for the estimated 7,029 listings on Airbnb in November 2015, an 11.7 percent increase compared to the 4,815 unique hosts who advertised the estimated 6,113 Airbnb listings as of December 2014 though this rate of increase was slightly less than the increase in total listings. This statistic indicates that there are a number of hosts with multiple listings on Airbnb. However, the nature of the listings for this group of multi-listing hosts remains unclear. Some hosts choose to

post several listings for the same property, while other hosts may simply post an entire house as one listing. For this reason, the Budget and Legislative Analyst is unable to clearly identify how many hosts are listing multiple entire homes for short-term rent on Airbnb. The proportion of unique hosts relative to total listings, at 76.5 percent in November 2015, declined slightly from December 2014 when it comprised 78.8 percent of total listings.

Exhibit 2 below depicts the changes in Airbnb listings in graphic form.



Source: December 2014 and November 2015 webscrapes completed by Murray Cox, Founder of Inside Airbnb (www.insideairbnb.com).

The six neighborhoods with the highest number of Airbnb listings remained unchanged between December 2014 and November 2015, as shown in Exhibit 3 below. Overall, there was a 15 percent increase in the number of Airbnb listings in San Francisco during that time. Though higher growth rates were experienced in neighborhoods with relatively lower numbers of listings in 2014, the majority of listings were still in the same top six neighborhoods, as shown in Exhibit 3.

Exhibit 3. Airbnb Listings by Neighborhood

	Neighborhood	December 2014 webscrape	November 2015 webscrape	Percent Change
T O P 6	Inner Mission	1,038	1,131	9.0%
	Haight-Ashbury/Western Addition	637	698	9.6%
	Castro/Eureka Valley	519	621	19.7%
	Russian Hill/Polk Gulch	486	540	11.1%
	SOMA	421	451	7.1%
	Portrero Hill/South Beach	395	440	11.4%
	Marina/Cow Hollow	324	316	-2.5%
	North Beach	258	280	8.5%
	Tenderloin/Union Square/Hayes Valley	241	310	28.6%
	Western Addition	237	330	39.2%
	Twin Peaks/Glen Park	228	263	15.4%
	Sunset	217	243	12.0%
	Inner Richmond	213	212	-0.5%
	Ingleside/Excelsior	178	237	33.1%
	Outer Richmond	150	201	34.0%
	Chinatown	102	124	21.6%
	Parkside	87	137	57.5%
	Miraloma/Sunnyside	78	97	24.4%
	Rincon Hill	78	77	-1.3%
	Bayview/Hunter's Point	58	80	37.9%
	Lake Merced	46	74	60.9%
	Visitacion Valley/Portola	37	63	70.3%
	Telegraph Hill/Waterfront	33	31	-6.1%
	Mission Bay	30	39	30.0%
	Financial District	9	10	11.1%
	Treasure Island	9	7	-22.2%
	Presidio	4	4	0.0%
	Unknown	1	13	1200.0%
	Total	6,114	7,029	15.0%

Source: December 2014 and November 2015 webscrapes completed by Murray Cox, Founder of Inside Airbnb (www.insideairbnb.com); and the Budget and Legislative Analyst's Office utilization model.

The average price per night for all short-term rental listings increased from December 2014 to November 2015. Airbnb listings of all types were priced at an average of \$187 per night in December 2014. By November 2015, the average price per listing increased by 18.2 percent to \$221 per night. Exhibit 4 below shows the details of the price increases by the type of listing. As can be seen, the largest percentage increase in average prices per night was for entire units.

Exhibit 4. Average Price per Listing Type and for All Listings on Airbnb

	Entire Unit Listings	Private Room Listings	Shared Room Listings	All Listings
December 2014	\$239	\$115	\$72	\$187
November 2015	\$291	\$134	\$77	\$221
Percent Change	21.8%	16.5%	6.9%	18.2%

Source: December 2014 and November 2015 webscrapes completed by Murray Cox, Founder of Inside Airbnb (www.insideairbnb.com).

Data Limitations of Webscrapes

Webscrapes are an invaluable tool to analyze short-term rental activity in the City but they do have limitations. First, Airbnb, among other hosting platforms, obscure the location of short-term rental units on their website, making it impossible to identify exact locations. To address this issue, the Budget and Legislative Analyst extracted zip codes included in the webscrapes and categorized them into neighborhoods. The neighborhood locations used in our analysis are expected to fall within 0.6 miles of their true location.⁷

Second, the number of bookings and nights rented are key to determining whether unhosted listings are complying with the 90-night rental cap under current City law. Unfortunately, the available webscrapes provide the number of listings but not the number of bookings or the total number of nights each listing was rented. To address this issue, the Budget and Legislative Analyst used the number of reviews in the webscrape for each listing to estimate the booking frequency per listing, or utilization rate. The number of reviews per Airbnb listing was assumed to represent 72 percent of all bookings, based on a public statement from Airbnb executive management in 2012 that an average of 72 percent of all guests review their rentals.⁸ The number of bookings was then multiplied by 5.1 nights, the average number of nights tourists in peer-to-peer lodgings such as Airbnb stayed in San Francisco in 2014, according to a San Francisco Travel survey of tourists, to produce the estimated number of nights a listing was rented.⁹

This model is unable to differentiate listings that were booked through Airbnb for longer than 30 days and therefore do not qualify as short-term rentals under the ordinance. However, based on available information about listings and the short-term rental industry, the Budget and Legislative Analyst does not believe that the population of listings booked for more than 30 days represents a significant

⁷ The location of each Airbnb listing is delineated by a circle with a radius of approximately 0.3 miles. Therefore, if the true location is within the boundaries of the circle, the longest distance would be from one edge of the circle, to the opposite end, which would be approximately 0.6 miles.

⁸ Chesky, Brian. September 7, 2012. "What percent of Airbnb hosts leave reviews for their guests?" Retrieved on May 6, 2015 from: <http://www.quora.com/What-percent-of-Airbnb-hosts-leave-reviews-for-their-guests>

⁹ San Francisco Travel Association, 2014 Visitor Profile, Final Report of Findings prepared by Destination Analysts, Inc.

proportion of total Airbnb listings. The details of the Budget and Legislative Analyst's methodology are included in the Appendix.

Airbnb hosts with no reviews were assumed to have no bookings. As a result, the estimated number of bookings may be understated. On the other hand, the number of total "active" listings may be overstated as hosts with no reviews may never have or may no longer be actively renting but may not have removed their listing from the platform.

Hosts can list one unit in a variety of ways on Airbnb. For instance, a host could post three separate listings for a two-bedroom apartment. It could be listed as an unhosted entire unit for some nights, and then each bedroom separately listed as hosted private room rentals for other nights. This could lead to an overestimation of the total number of short-term rental housing units being advertised if total listings is used as the measure. The number of unique hosts reported above is a better measure of the number of hosts and housing units being rented. This report focuses on entire unit listings, which should only be listed once and would not be impacted by duplicate listings of the same housing unit.

Short-Term Rental Listings Data Reported by Hosting Platforms

Airbnb and TripAdvisor, which owns Flipkey, shared information on their respective short-term rental listings with the Budget and Legislative Analyst's Office just prior to completion of this report. The Budget and Legislative Analyst's Office also contacted VRBO and Homeaway to request their listing data and to interview them about the City's short-term rental laws and enforcement efforts, but they were unable to be interviewed or provide information by the deadline for this report.

As of March 15, 2016, Airbnb reported that there were a total of 9,448 Airbnb listings in San Francisco, managed by 7,046 Airbnb hosts. The total number of listings reported by Airbnb represents the number of active listings advertised on Airbnb on that date. The 9,448 total listings reported by Airbnb is 2,419 more listings, or 34.4 percent higher, than the 7,029 listings identified in the November 2015 webscrape and reported above.

Of the total 9,448 Airbnb listings, Airbnb disclosed that 5,636, or 59.7 percent of all listings, were for entire units, 1,149 of which were managed by hosts who advertised more than one entire unit. Airbnb explained that these 1,149 listings are composed of traditional hotels that list on Airbnb, long-term rentals (30 days or more), and other hosts with more than one entire home listing.

Airbnb did not provide data on the frequency of bookings for each listing or information on the number of hosts who were registered with the Office of Short-Term Rentals.

Flipkey reported that they had 896 listings in San Francisco from April 1, 2015 through March 31, 2016, and the average stay of its resultant bookings was 4.73 nights. Flipkey's average stay estimate is in line with the 5.1 average night stay estimated by San Francisco Travel and used by the Budget and Legislative Analyst's Office to estimate an average booking rate.

As required by City law, TripAdvisor remits transient occupancy taxes on behalf of Flipkey hosts who advertise on the Flipkey website under a commission arrangement. Flipkey offers hosts the option of paying a commission each time a listing is booked through the platform or paying a yearly subscription fee for the ability to post on the Flipkey website.

Flipkey is unable to remit taxes for hosts using the subscription model as transactions typically occur away from the Flipkey website. Flipkey was not able to report information on how transient occupancy taxes are handled in these cases. Flipkey reports that 93 percent of its hosts use the commission model, while 7 percent pay the subscription fee.

Total Short-Term Rental Listings in San Francisco

At this time, it is not possible to estimate the total number of listings across all platforms in San Francisco. Simply adding the total number of listings on each platform includes duplicates as hosts can list their short-term rentals on multiple websites. As of early March 2016, Homeaway had 1,774 listings in San Francisco, while VRBO had 1,793 listings. The Budget and Legislative Analyst's Office was unable to estimate the number of Craigslist listings as the filter functions did not sufficiently isolate short-term rentals in San Francisco.

Compliance with February 2015 Legislation

Pursuant to the City's February 2015 short-term rental legislation, all short-term rental listings must be registered with OSTR prior to advertisement on a hosting platform. As of March 2016, OSTR had received 1,647 applications. The webscrape provided by Murray Cox shows a total of 7,029 Airbnb listings managed by 5,378 unique hosts¹⁰ as of November 2015.

In comparison to the 5,378 unique hosts identified through the November 2015 webscrape, OSTR had received 1,082 applications as of November 2015. This suggests that there may have been up to 4,296, or 79.9 percent of Airbnb's 5,378 unique hosts, operating out of compliance with the legislation in November 2015. There may be additional non-compliant hosts on other hosting platforms such as VRBO, Homeaway, and Flipkey. However, the Budget and Legislative Analyst's Office does not have sufficient information to evaluate compliance on other hosting platforms.

Using the listing data provided by Airbnb, there were 7,046 unique hosts listing rentals as of March 15, 2016. At that time, OSTR had received 1,647 registration applications, indicating that there were up to 5,399 hosts out of compliance with the City's short-term rental registration requirement, or 1,103 more than the 4,296 hosts estimated out of compliance from the November 2015 webscrape. The number of hosts who are out of compliance could be higher as some San

¹⁰ Unique hosts refer to each person or entity with an Airbnb account. Each unique host may have one or more listings on Airbnb.

Francisco residents registered with the Office of Short-Term Rentals could be using other hosting platforms.

Of the total 7,029 Airbnb listings identified in the November 2015 webscrape, 4,033, or 57.4 percent, were listings for entire homes. The Budget and Legislative Analyst used entire home listings as an estimate for unhosted rentals, or rentals subject to the 90 night per year cap under current City law. Though there are likely some exceptions, these rentals should mostly represent cases where hosts are not present and are the best proxy for unhosted units available at this time.¹¹ Estimating the number of units out of the 4,033 entire homes that were rented out for more than 90 nights per year includes all rentals for the life span of the identified listings, which, for some listings, predates February 2015 when the rental night cap was established in San Francisco.

The Budget and Legislative Analyst completed a separate analysis that identified 285 listings out of the 1,094 entire home listings that first posted between February 1, 2015, or after, and November 1, 2015 that are estimated to have exceeded the 90-night cap.¹² These listings were managed by 261 unique hosts and booked for a median of 180 nights.

Of the total 4,033 entire home Airbnb listings from November 2015, an estimated 1,055, or 26.2 percent, had bookings for more than 90 nights per year during the time they have been posted on Airbnb, including periods before February 2015. These listings would be currently out of compliance with the existing legislation, which caps unhosted nights at 90 nights per year. These listings were managed by 969 unique hosts and had a median occupancy of 176.4 nights per year.

Compliance Efforts of Online Hosting Platforms

To comply with the City requirement that online hosting platforms inform their users of San Francisco short-term rental regulations, Airbnb currently has a publically accessible webpage on their site dedicated to educating their users about how to comply with short-term rental regulations in San Francisco. Airbnb also provides information on transient occupancy taxes and short-term rental registration to users during the process to create a new Airbnb listing. Flipkey also has a webpage dedicated to San Francisco short-term regulations, and points hosts to the relevant sections of the San Francisco Administrative Code.

¹¹ Rentals can be listed as hosted or unhosted but it is not always clear whether the host resides in the housing unit or not. For example, an in-law apartment might be listed as unhosted but the owner is present in the upstairs part of the house. Also, while it is uncommon, hosts may choose to post various listings for one entire house, each time with a different price, or perhaps tagged in a different neighborhood. This might lead to an overestimation of the number of hosted units. However, the Budget and Legislative Analyst views this as an unusual case.

¹² The estimate could be understated because the Budget and Legislative Analyst used the date the host joined Airbnb as the cutoff point, but the ordinance affected all listings only as of February 2015. The webscrapes do not include booking dates or review dates. Therefore, a host could have joined in 2009, and not registered their unit on February 1, 2015, and they would be out of compliance but not captured in that estimate of 285 nights.

However, it could not be determined what measures other online hosting platforms operating in San Francisco have taken to educate their users. Other online hosting platforms such as VRBO, Homeaway, and Craigslist do not appear to have publically accessible webpages or links with information about local regulations though they may be providing such required information to their customers offline. Though contacted, VRBO and Homeaway were not available to speak with the Budget and Legislative Analyst's Office until after this report was completed. Craigslist, which appears to list a small number of short-term rentals, was not contacted.

The San Francisco Treasurer & Tax Collector is mandated to collect transient occupancy taxes from all hotels and other commercial lodging enterprises, including short-term residential rental hosts. The Treasurer & Tax Collector identified short-term rental hosts who had not obtained business registration certificates and sent two rounds of notices in late 2015 to inform them that they were out of compliance with existing San Francisco short-term rental regulations. Airbnb sent subsequent letters to some or all of this subset of hosts explaining how to become compliant.

In an SFGate article on April 2, 2016, Airbnb pledged to investigate hosts renting multiple units in San Francisco, and stated that Airbnb had removed almost 218 listings as of January 2016.¹³ However, Airbnb does not remove all illegal listings or penalize all users who are out of compliance with existing regulations. A brief review of the Airbnb website revealed a number of Airbnb listings without short-term rental registration numbers. Airbnb previously included a field for entering a short-term rental registration number on each listing. However, that field is no longer available on the Airbnb website for hosts to include this pertinent information. Airbnb representatives commented that hosts may post short-term registration numbers in the "Other Things to Note" field. The other hosting platforms do not appear to remove illegal listings either as a review of their websites found that many listings do not have registration numbers posted.

Enforcement of Registration Requirements

The Board of Supervisors created the Office of Short-Term Rentals (OSTR) as a unit of the Planning Department in July 2015 specifically to enforce the City's short-term rental laws.¹⁴ Prior to that, the Planning Department had led enforcement efforts with existing staff.

OSTR received an annual budget appropriation of \$880,106 for FY 2015-16, which includes \$455,005 for personnel costs from the General Services Agency budget, \$395,101 for personnel costs paid by the Planning Department, and a materials

¹³ [Airbnb to Purge Illegal Hotels from San Francisco, SFGate, April 2, 2016.](#)

¹⁴ Enacted through Ordinance 130-15, and outlined City Charter Section 41A.7.

budget of \$30,000. Though housed in the Planning Department, the Office is managed by the General Services Agency/City Administrator's Office.

OSTR staff includes three full-time Planners who have a familiarity with the City's neighborhoods and structures and three other full-time positions: a Management Assistant, a Senior Administrative Analyst, and a Director. Staff duties include (a) processing registration applications, (b) completing analyses to identify hosts who are out of compliance with existing regulations, (c) conducting investigations of potential violations of the pertinent ordinances, (d) issuing notices of violations, and (e) holding hearings for hosts who have requested a hearing upon receiving a notice of violation.¹⁵ OSTR was not fully staffed until December 2015.

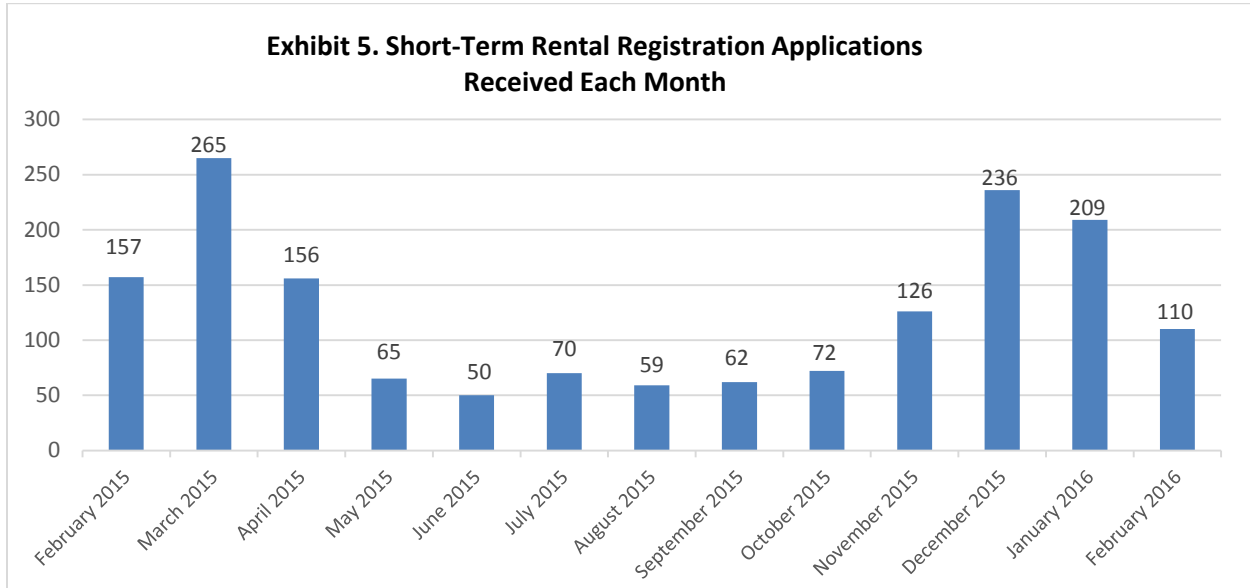
Short-Term Rental Registration Statistics

As of March 2016, the Office of Short-Term Rentals had received 1,647 registration applications and issued 1,068 registration certificates. Compared solely to the 7,029 total Airbnb listings identified in the November 2015 webscrape, these statistics imply that there may be up to 5,382, or 76.6 percent of all listings, out of compliance as all hosts are required to register. However, as discussed above, since some hosts list their units multiple times on a platform (e.g., the unit may be listed as unhosted for nights when the host will be away but as a private room rental for the same unit on nights when the host will be present), a more appropriate method of estimating the number of hosts potentially out of compliance with the City's registration requirements is to compare the 1,647 registration applications received by OSTR to the 5,378 unique hosts identified in the November 2015 webscrape. This results in up to approximately 3,731 unique Airbnb hosts, or 69 percent of all unique hosts identified, apparently out of compliance with the City's registration requirements (5,378 unique hosts less 1,647 registration applications). On the other hand, the pool of OSTR registered hosts may represent a number of hosting platforms, and not just Airbnb. Therefore, there may be an even smaller percentage of registration applications relative to all short-term rental hosts in San Francisco.

Of the remaining 579 submitted registration applications not yet approved by OSTR (the difference between the 1,647 applications and the 1,068 certified), 354 were rejected or deemed incomplete and 225 applications are in backlog. Exhibit 5 below presents the total number of short-term rental applications received by OSTR each month. As can be seen, a significant increase in applications took place after November 2015. The increase in registration applications towards the end of 2015 could be explained by a variety of factors including, but not limited to, the following: (1) in late 2015, the Treasurer & Tax Collector sent notifications to short-term residential rental hosts advising that they were in violation of existing regulations and must obtain a business registration certificate; (2) the November 2015 election may have spurred increased compliance as there was the potential of more stringent regulation of short-term rentals, as proposed in Proposition F;

¹⁵ If OSTR does not receive a hearing request within 30 days of the notice of violation, OSTR staff does not scheduling hearing and the penalty is calculated based on when the violation is abated.

(3) new hosts may have been listing in anticipation of the Super Bowl, and (4) the public awareness initiatives undertaken by the Office of Short-Term Rentals and the overall spike in public attention to this issue may have sparked a wave of compliant behavior towards the end of 2015.



Source: Office of Short-Term Rentals.

Office of Short-Term Rentals Public Awareness Efforts

OSTR has engaged in a variety of initiatives to increase public awareness of short-term regulations in San Francisco. The OSTR website and the San Francisco Business Portal¹⁶ both provide details about the short-term rental registration process and how to comply with the existing legislation. However, registration cannot be completed online; a host must visit the OSTR offices and meet with staff there to submit a registration application.

Over the past few months, OSTR has presented information about short-term rental regulations and requirements on numerous media outlets, including the San Francisco Chronicle, KPIX, KQED Radio, Sound of Hope Radio, and Sing Tao Chinese Radio. In addition, OSTR has made presentations on this topic to interest groups, such as the Small Property Owners of San Francisco, the Homesharers of San Francisco, and the Hayes Valley Neighborhood Association.

Beyond these efforts, OSTR has organized a series of events across the City to educate the public about short-term rental regulations, such as a Registration Drive at City Hall. In addition, OSTR now has weekly “drop-in” hours on Wednesday afternoons, where residents may visit without an appointment to ask

¹⁶ The San Francisco Business Portal is a new initiative that compiles all the necessary information and regulations about starting a business in the City. There is now a dedicated page for short-term residential rental regulations.

general questions about the rules and registration process, submit an application, or file complaints. OSTR also holds monthly drop-in hours the first Monday evening of every month. However, registration can only occur with an appointment.

Registration Process

The short-term rental host registration process requires two steps. First, hosts must obtain a San Francisco Business Registration Certificate from the Treasurer & Tax Collector¹⁷ and then, after completing that process, schedule a required in-person appointment to register with the Office of Short-Term Rentals.

Currently, all in-person registration application appointments are held at the Office of Short-Term Rentals during the afternoon on Mondays, Tuesdays, and Thursdays, as well as all day on Fridays, excluding holidays. OSTR has recently added drop-in hours during the evening to accommodate members of the public who are unable to visit and ask general questions during regular business hours. OSTR's registration application processing requires an estimated 2-4 weeks.

Applicants must meet the following requirements for their applications to be approved:

1. Submit proof of residency;
2. Present a San Francisco Business Registration Certification obtained from the Treasurer & Tax Collector;
3. Obtain and provide documentation of liability insurance in the amount of no less than \$500,000;
4. Provide documentation that their unit does not have any outstanding Planning, Building, Housing, Fire, Health, Police, or other applicable City code violations; and
5. Pay an initial application fee of \$50, which remains valid for two years (pending the registered unit remains in good standing).

Once approved, hosts must provide proof such as a web link(s) to their listing to demonstrate they have included their short-term rental registration number on each of their short-term rental listings. Short-term rental hosts are also required to submit quarterly reports of all stays at their units for the prior three months, or for newer listings, back to the date of their initial registration.

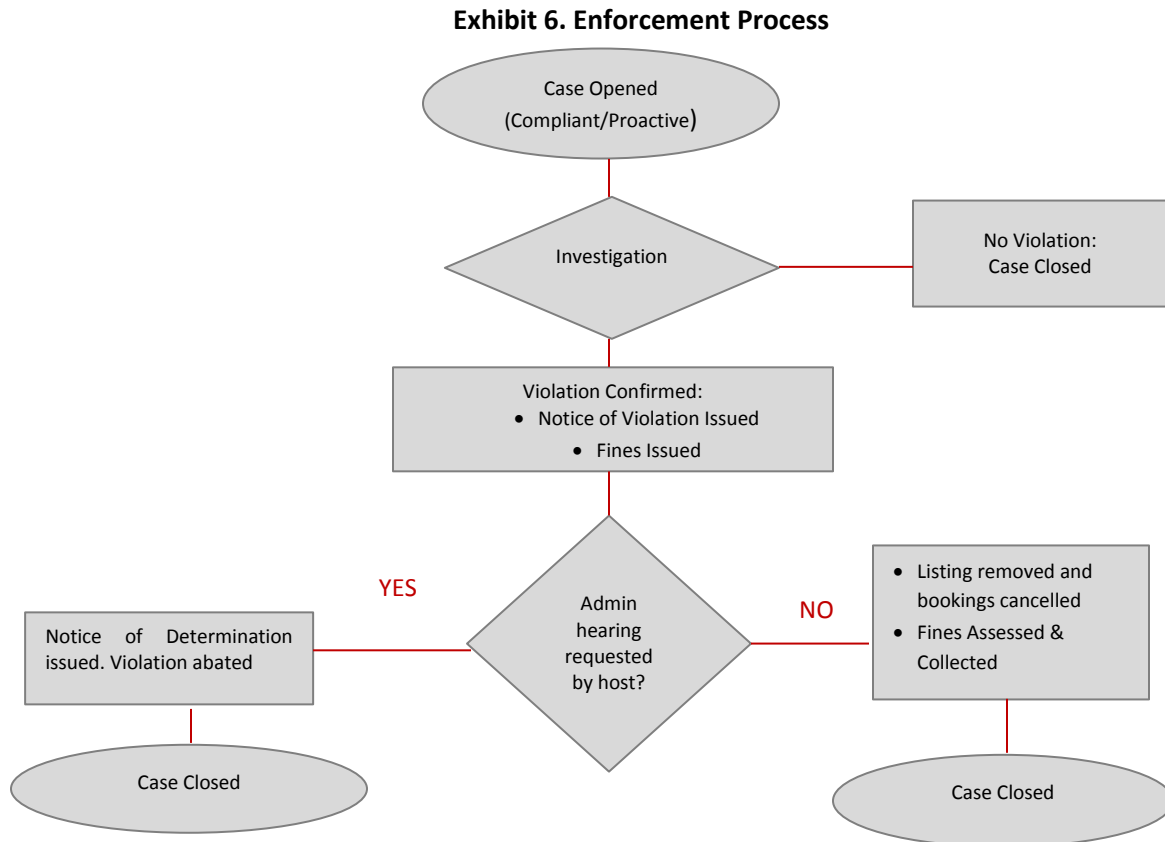
OSTR may revoke the registration of non-compliant hosts. OSTR reports that no such revocations have occurred yet. The new City laws required hosts to submit the first set of quarterly reports in January, 2016 and OSTR is now in the process of reviewing those reports, which should provide the number of all short-term rental stays at each registered unit for the prior three months. Starting with the January 1, 2016 reports, the ordinance requires that hosts submit quarterly

¹⁷ Residents may apply for a Business Registration Certificate online if the only business activity includes short-term residential rentals, if the host has zero employees, and if the applicant only receives rental income for the operation of one residential structure consisting of fewer than four units; a cooperative housing corporation, or one residential condominium.

reports with their booking information every January 1, April 1, July 1, and October 1 thereafter. OSTR is also considering a shift in their procedures to requesting hosts to provide OSTR with updated links to their advertisements on hosting platforms, as a part of their quarterly reporting.

Enforcement Strategies & Results

OSTR's initial strategy since its inception in July 2015 has been to ensure that eligible residents are registered, and then shift their focus and resources to enforcement. The enforcement process is outlined in Exhibit 6 below and can be initiated by resident complaints or through pro-active investigative initiatives performed by OSTR.



Source: Office of Short-Term Rentals.

OSTR also targets unregistered multi-unit hosts as they are illegally listing more than one housing unit on a short-term basis, and therefore violating the City requirement that limits hosts to only renting out their primary residence. OSTR uses webscrapes completed by Murray Cox to inform such enforcement efforts, which they believe represent a small number of hosts.

As of the end of February 2016, OSTR reported that they had pursued 322 enforcement cases and issued 79 notices of violation, resulting in a total of \$680,000 in issued penalties, as shown in Exhibit 7 below. Of the \$680,000, \$143,748 had been collected, \$249,260 is pending, and \$287,136 has been referred to the City's Bureau of Delinquent Revenues.

As of the end of February 2016, OSTR estimates that approximately 92.2 percent of their cases, or 297 of the 322 enforcement cases, were prompted by complaints (274) and referrals (23) by other agencies, such as the Planning Department, the Department of Building Inspection, and the Mayor’s Office of Housing. Of the 322 cases, 25 were pro-actively initiated by OSTR. In a few instances, OSTR may receive a complaint, and during the investigation process, discover additional violations that they pursue as separate cases. OSTR could not report the total number of complaints received that generated its cases.

OSTR reports that it has been challenging to identify violations without access to precise address and other data maintained by the online hosting platforms. Despite ongoing outreach by the Office of Short-Term Rentals, no online hosting platforms have yet to share information such as the locations of the short-term rental units with the City. While OSTR continues to levy fines against hosts found to be non-compliant, there still remains a sizeable gap between the number of registered hosts and the number of hosts advertising short-term rentals on online platforms. OSTR may be able to further close that gap in coming months as OSTR became fully staffed in December 2015.

Exhibit 7. OSTR Enforcement Cases for Non-Compliant Hosts
 (February 2015 – February 2016)

322 Enforcement Cases (\$680,000 in Assessed Penalties)		
<ul style="list-style-type: none"> • 147 cases under investigation • 138 cases closed • 37 cases pending closure 	79 Notices of violation issued	18 Administrative Hearings

Source: Office of Short-Term Rentals.

In addition to responding to complaints, OSTR uses other resources to identify San Francisco short-term rental hosts who are out of compliance. First, OSTR staff analyzes publicly available webscrapes, mainly those completed by Murray Cox, and is now building in-house capacity to complete independent webscrapes to be able to better identify listing locations and information such as the estimated number of rental nights per listing. Second, OSTR staff routinely reviews listings on online hosting platforms in search of potential violations.

Though at least some registered hosts post their registration numbers on their Airbnb and other hosting platform listings, none of the hosting platforms have a required field for short-term rental registration identification numbers. Though required to do so by City law, a random review of hosting platform websites by the Budget and Legislative Analyst showed that many listings for San Francisco short-term rentals do not include a short-term rental registration identification number on their listings.

While OSTR is taking many steps to improve enforcement of the City’s short-term rental laws, the office is limited due to:

1. The absence of names of hosts and locations of the short-term rental units that they are responsible for regulating;
2. The lack of information reported by the hosting platforms on hosts that are listing on their websites without City registration numbers;
3. The lack of any information reported by the hosting platforms on unhosted bookings exceeding 90 nights per year in violation of City law; and
4. Information that the Treasurer & Tax Collector could provide on short-term rental units whose transient occupancy tax payments indicate they may have booked their units for more than 90 nights.

At their request, the Budget and Legislative Analyst met with Airbnb representatives in March 2016, where Airbnb representatives disclosed that tracking and reporting the number of rental nights per host or host without registration numbers would be burdensome. It would require Airbnb to change their business processes and systems for San Francisco only and to stay abreast of changing City regulations, not only in San Francisco, but also in the over 34,000 cities around the world where Airbnb operates.

The Budget and Legislative Analyst also interviewed representatives of TripAdvisor, the parent company of Flipkey, and contacted VRBO and Homeway. Representatives of VRBO and Homeaway did agree to be interviewed but were not available until after the deadline for completing this report.

Collection of Transient Occupancy Tax from Short-Term Rental Hosts

The Office of the Treasurer & Tax Collector has the authority and obligation to issue business registration certificates and collect all business taxes in San Francisco, including the transient occupancy tax. San Francisco residents with short-term rental units and hosting platforms must obtain a business registration certificate and pay transient occupancy taxes as all hotels and any residential unit rented for less than 30 days are liable. The Office of the Treasurer & Tax Collector reported that over 1,500 businesses are registered with their office as short-term residential rental businesses or hosting platforms.

In 2014, the Office of the Treasurer & Tax Collector published guidance to website companies about how to become qualified to act as their users' agent for collection of transient occupancy tax. For hosts, only companies designated by the Office of the Treasurer & Tax Collector as a "Qualified Website Company" are guaranteed to collect and remit all transient occupancy taxes due directly to the Treasurer & Tax Collector on behalf of their host users. In 2015, the Office of the Treasurer & Tax Collector created a "Small Operator" designation to simplify tax filing requirements for hosts earning \$40,000 or less, designated Airbnb as a Qualified Website Company, and created an online business registration solution for hosts.

TripAdvisor does remit taxes on behalf of most Flipkey users, as Flipkey is a subsidiary company of TripAdvisor. However, the Office of the Treasurer & Tax Collector did not confirm whether hosting platforms other than Airbnb, are remitting taxes on behalf of their hosts. Because VRBO and Homeaway were unable to be interviewed by the Budget and Legislative Analyst prior to completion of this report, we cannot report on the extent to which they are collecting and remitting transient occupancy taxes to the City.

The Treasurer & Tax Collector's Office reports that total transient occupancy tax revenues, most of which is generated by hotels, for the last three fiscal years ranged from \$310,052,451 in FY 2012-13 to \$394,262,213 in FY 2014-15. An undisclosed portion of these amounts is generated from short-term rentals, according to the Treasurer & Tax Collector.

In addition to collecting transient occupancy and other business taxes, the Office of the Treasurer & Tax Collector has the authority to audit and enforce tax laws concerning any business operating in San Francisco, including residential short-term rentals. As previously mentioned, in October 2015 and December 2015, the Treasurer & Tax Collector sent notifications to selected San Francisco hosts who had not yet obtained a business registration certificate and informed them of their registration requirements. The Office of Short-Term Rentals did not participate in this initiative.

The Office of the Treasurer & Tax Collector reports that it is working to disclose aggregate information on the amount of transient occupancy taxes collected from short-term rental hosts and website companies. Because the information is not yet available, the Budget and Legislative Analyst is unable to verify whether Airbnb and short-term rental hosts in general are remitting appropriate transient occupancy taxes to the City relative to the estimated number of total short-term rental booked nights. The Treasurer & Tax Collector did not confirm whether audits of hosting platforms or hosts have been completed or are in progress. However, the Treasurer & Tax Collector did state that they conduct audits of any business in San Francisco where they have reason to believe a violation has occurred. OSTR may share its violation cases with the Treasurer & Tax Collector's Office, which then decides whether to pursue the case.

OSTR reports that they do not receive information about short-term rental host transient occupancy taxes paid or business registration certification violations from the Treasurer & Tax Collector though the Treasurer & Tax Collector reports that they are currently sharing business registration certificate information with OSTR to help identify all registered businesses subject to transient occupancy taxes.

The City Business and Tax Regulations Code appears to allow for the Treasurer & Tax Collector to share transient occupancy tax information with OSTR or other City agencies in the interest of the other agencies' interests. However, the Treasurer & Tax Collector's Office maintains that the information in a taxpayer's return, such as the amount of transient occupancy taxes remitted, is confidential, and can only be shared with other taxing agencies and only in the interest of pursuing

collection of taxes. However, the Code language appears to allow the Treasurer & Tax Collector to share such data for other purposes:

[the Tax Collector may]“enter into agreements with other public agencies providing for the exchange of information for official purposes of said agencies...”¹⁸

If this provision allows for data sharing, the Treasurer & Tax Collector could potentially share transient occupancy tax data with OSTR to help identify hosts that appear to be exceeding the 90 night cap on unhosted rentals. The Budget and Legislative Analyst’s Office used our booking model to estimate that average transient occupancy tax collected from just Airbnb per year could be approximately \$15,128,439.¹⁹ This is based on the 14 percent transient occupancy tax rate, the price per night, cleaning fees, the Airbnb host service fee,²⁰ and the midpoint of Airbnb’s guest service fee collection range according to their website.²¹ This appears to be a reasonable estimate as Airbnb reported just prior to completion of this report that they remitted \$14.5 million in transient occupancy taxes to the City and County of San Francisco in 2015.

The Office of the Assessor-Recorder and the Treasurer & Tax Collector recently launched an initiative that will require short-term rental hosts, like all businesses in San Francisco, to pay business personal property taxes on all the “furniture, appliances, supplies, equipment and fixtures” used in their short-term rental units. The Office of the Assessor-Recorder estimates that the new tax will be a little over 1 percent of the value of these resources, and is intended to be comparable to the tax paid by business owners on their office equipment.

¹⁸ Business and Tax Regulations Code Section 6.22-1(g),

¹⁹ According to the Treasurer & Tax Collector’s Office, the transient occupancy tax is 14 percent of the rent and is added to the amount of rent charged to the guest. To calculate transient occupancy tax, the Budget and Legislative Analyst multiplied the rent charged by 14 percent. Under Tax Collector Regulation 2012-1, “rent” is the entire amount charged to the guest, regardless whether some or all of those charges are designated as “service fees” or “advertising fees.” For example, if a guest is charged \$110 plus a \$20 “service fee,” the taxable rent is \$130. The tax would be 14 percent of \$130, which is \$18.20. To collect the transient occupancy tax, the party that receives the rent payment adds TOT to the rent and collects both at the same time. In the last example, a guest would be charged \$110 + \$20 + \$18.20 = \$148.20. The party receiving payment from the guest must provide a receipt. The receipt must separately state the amount of TOT collected.

²⁰ 3 percent on a reservation before fees and taxes. Accessed March 14, 2016

²¹ According to Airbnb.com, “Service fees for guests typically range between 6-12 percent [on the reservation before fees and taxes] but it can be higher or lower depending on the specifics of the reservation. The higher the subtotal, the lower the percentage so you can save money when booking large reservations.” See source information here. Accessed March 14, 2016. The Budget and Legislative Analyst’s Office used the mid-point of 9 percent for the estimate.

Policy Options

The Board of Supervisors could consider a number of options to improve compliance with the City's short-term rental laws that became effective in February 2015.

1. Amend Existing Law to Increase the Role of Online Hosting Platforms in Compliance Efforts

Online hosting platforms are the primary facilitators of short-term rental activity in San Francisco. Online hosting platforms can not only educate their users on short-term rental regulations but could also require compliance before hosts can list on their platforms. The Board of Supervisors could amend the existing legislation to require that online hosting platforms prohibit hosts from advertising on their websites if they have not registered with the City. This could create some new costs for the platforms due to changes in business processes for hosting platforms.

While some online hosting platforms do provide information to their users about local regulations, some users may not realize that they have to complete two separate registrations in order to be compliant. The Board of Supervisors could also request that hosting platforms revise educational content to clarify the two-step process, unless or until, the existing process is simplified.

Access to data on short-term rental activity in the City would strengthen the City's ability to enforce existing regulations. As of the writing of this report, large-scale online hosting platforms, such as Airbnb, provided aggregate figures such as the total number of listings by listing types. However, Airbnb has not provided data on the number of hosts exceeding the 90-night booking limit for unhosted units. The Board of Supervisors could mandate that host data be confidentially provided to the City to increase the City's ability to enforce existing regulations.

2. Improve Reporting and Accountability Measures for Transient Occupancy Tax Collection

The Treasurer & Tax Collector's Office reports that it is working to disclose the amount of transient occupancy tax remitted by short-term rental hosts and online hosting platforms.

If not already planned, the Board of Supervisors could request that the offices of the Treasurer & Tax Collector and Controller collaborate to devise a method of regularly reporting aggregate level statistics, similar to what is regularly reported on the hotel industry, on short-term rental transient occupancy tax receipts and related corroborative data such as number of booked nights for short-term rentals. Such information would provide the Board of Supervisors, OSTR, and the public with more information about the state of the industry in the City and a measure of host compliance with City tax laws.

3. Improve Collaboration and Data Sharing between the Office of Short-Term Rentals and the Treasurer & Tax Collector

Both OSTR and the Treasurer & Tax Collector share the goal of ensuring that short-term rental hosts comply with existing laws and regulations. Therefore, streamlining processes and adopting a shared strategy would not only ease hosts' ability to comply but could possibly create efficiency savings for the City.

The Treasurer & Tax Collector reports they have begun sharing business registration certificate information with OSTR for cross referencing and identifying non-compliant hosts. The Board of Supervisors could request that the Treasurer & Tax Collector report back to the Board on if and how transient occupancy tax data could be shared with OSTR to help identify unregistered hosts and those that appear to be exceeding the 90 night cap on unhosted short-term rentals.

4. Simplify the Short-Term Rental Registration Process

The two-stage process with separate business tax registration and short-term rental host registration processes might deter or confuse otherwise compliant short-term rental hosts. The Board of Supervisors could request that the Treasurer & Tax Collector collaborate with the Office of Short-Term Rentals to streamline the registration process and report back the results and specific proposals to the Board. This issue may apply to other businesses besides short-term rental hosts as the Treasurer & Tax Collector reports that all businesses in San Francisco must obtain a business tax registration certificate prior to other regulatory or permitting processes.

A one-stop web portal where short-term residential hosts can submit information once and be issued both a business registration certification as well as a short-term rental registration number would be ideal. OSTR and the Treasurer & Tax Collector would need to collaborate to design an effective system and ensure that taxpayer confidentiality and rights are protected. The new San Francisco Business Portal that centralizes regulations and requirements for new businesses in one place, could be a tool for such streamlining.

Submitting short-term rentals applications in-person to the Office of Short-Term Rentals may also be delaying host registration. The Board of Supervisors could request that the Office of Short-Term Rentals explore and report back to the Board on alternative investigative methods that do not require hosts to apply in person.

The Office of Short-Term Rentals advised that one of the primary obstacles to a successful online application is the rising number of sophisticated attempts to submit fraudulent documents. The Office of Short-Term Rentals commented that it would be difficult to verify the validity of original documents, such as drivers' licenses and state identification cards, through an online process. The Budget and Legislative Analyst's Office recognizes this challenge and suggests that the Office of Short-Term Rentals may be able to collaborate with other City departments to identify strategies to resolve this issue.

Ideally, the entire registration process could be completed online, assuming sufficient mechanisms could be established to verify the identity of hosts, as well as home ownership and residency status. This would remove what could be one of the most significant barriers to compliance and equip the Office of Short-Term Rentals with more staff time for analysis and identifying violation cases.

Appendix I. Methodology

As previously mentioned, the statistics on short-term rental activity by Airbnb hosts are based on two webscrapes completed by Murray Cox, the Founder of Inside Airbnb, in December 2014 and November 2015. A webscrape is a technique that extracts and compiles data from public websites and allows for analysis that would otherwise be infeasible.

Vetting Process for Airbnb Webscrape Data

Prior to selecting Mr. Cox's data for analysis, the Budget and Legislative Analyst's Office reviewed seven webscrapes of the Airbnb website prepared by three technology professionals.²² The vetting process was completed in preparation for the May 2015 Budget and Legislative Analyst's report on the impact of short-term rentals on housing in San Francisco.

All seven webscrapes showed comparable and consistent trends over time in terms of the number of Airbnb listings across the three different authors. Appendix Table 1 below shows sample results from all seven webscrapes. The Budget and Legislative Analyst used the December 2014 webscrape prepared by Murray Cox because Mr. Cox's dataset provided the most comprehensive collection of data. The Budget and Legislative Analyst chose to use Mr. Cox's November 2015 webscrape data for this 2016 report to ensure consistency across the data.

Webscrape authors may complete several scrapes of a given website to validate data and reduce error. Because of the consistency of the information in the webscrapes reviewed, the Budget and Legislative Analyst concluded that they were reliable sources of information for this analysis.

²² The reviewed webscrapes were prepared by the following three individuals. Tom Slee, who works in the software industry, writes about technology and politics, is active in the open data and sharing economy communities, and is based in Waterloo, Ontario. Murray Cox is a community activist based in New York City who utilizes his technology skills for various non-profits and community groups. He has a degree in computer science from the University of Sydney. Gus Dolan collaborates with the Anti-Eviction Mapping Project.

Appendix Table 1. Estimated Number of Airbnb Listings by Webscrape Authors

		Number of Entire Unit Listings	Number of Private Room Listings	Number of Shared Room Listings	Total Number of Listings
November (Tom Slee)	2013	3,533	1,917	235	5,685
May (Tom Slee)	2014	2,991	1,733	192	4,916
August (Tom Slee)	2014	3,001	1,691	173	4,865
December (Murray Cox)	2014	3,651	2,196	266	6,113
December (Tom Slee)	2014	3,329	1,938	235	5,502
February (Tom Slee)	2015	3,176	1,844	229	5,249
February (Gus Dolan)	2015	2,988	2,101		5,089

Source: Webscrapes prepared by: November 2013, May 2014, August 2014, December 2014 and February 2015: Tom Slee; December 2014: Murray Cox; February 2015: Gus Dolan; Budget and Legislative Analyst review of Airbnb.com in April 2015

Webscrape Data Limitations

In the absence of data from online hosting platforms, a webscrape is an invaluable tool to analyze short-term rental activity in the City but there are limitations. First, Airbnb, among other hosting platforms, obscure the location of short-term rental units on their website, making it impossible to identify exact locations. To address this issue, the Budget and Legislative Analyst extracted zip codes included in the webscrapes and categorized them into neighborhoods. The neighborhood locations used in our analysis are expected to fall within 0.6 miles of their true location.

Second, the number of bookings and nights rented are key to determining whether unhosted listings are complying with the 90 night rental cap under current City law. Available webscrapes only provide the number of listings but not the number of bookings or the total number nights each listing was rented. To address this issue, the Budget and Legislative Analyst used the number of reviews scraped from each listing to estimate the booking frequency per listing, or utilization rate. The number of reviews per Airbnb listing was assumed to represent 72 percent of all bookings, based on a public statement from Airbnb executive management. The number of estimated bookings was then multiplied by 5.1 nights, the average number of nights tourists stay in short-term rentals in San Francisco, according to San Francisco Travel, to produce the estimated

number of nights per year a listing was rented. The details of this methodology are included in the Appendix.

Airbnb hosts with no listings were assumed to have no bookings. As a result, the number of bookings may be understated. On the other hand, the number of total listings may be overstated as hosts with no reviews may no longer be actively renting but have not removed their listing from the platform.

Hosts can list one unit in a variety of ways on Airbnb. For instance, a host could post three separate listings for a two-bedroom apartment. It could be listed as an entire unit, and then each bedroom in a distinct advertisement, each for a private room. This could lead to an overestimation of the total number of short-term rental housing units being advertised. This report focuses on entire unit listings, which would not be impacted by such duplications. The Budget and Legislative Analyst did request a method to remove duplicates from the total listing count from Airbnb but they have not provided such information.

Calculation of the Average Number of Nights Booked Per Year

Web scrape data does not include booking rates for Airbnb listings, but does track the number of reviews completed per Airbnb listing. To address this data gap, the Budget and Legislative Analyst designed a utilization rate model to estimate the average number of nights per year each Airbnb listing was booked. The model is based on two key data assumptions:

1. Average Airbnb review rate of 72 percent, as stated by Brian Chesky, CEO and Co-Founder of Airbnb in 2012; and
2. Average 5.1 night stay in short-term rentals in San Francisco as reported by San Francisco (SF) Travel.

Formula (1): Number of Nights Booked

$(\# \text{ Reviews for a listing} / \text{Average Airbnb Review Rate}) * \text{Average \# night-stay for a short-term rental in San Francisco}$

First, to estimate the total number of bookings per Airbnb listing, the Budget and Legislative Analyst divided the total number of reviews reported in the web scrape by the 72 percent average review rate for Airbnb listings.

Then, to calculate the number of nights an n Airbnb listing was booked, the Budget and Legislative Analyst multiplied the total estimated number of bookings by the average 5.1 stay in short-term rentals.

Number of Nights Booked for Year:

Formula (2): Utilization Rate over Lifetime of Listing

(Estimated # nights booked for a listing/# Days listing is active)

Formula (3): # Days a Listing is Booked Out of the Year

Utilization rate over the lifetime * 365 days

The Budget and Legislative Analyst used a two-step calculation to estimate the average number of nights booked per year for each Airbnb listing. First the Budget and Legislative Analyst divided the estimated number of nights booked for a listing by the number of days a listing is active to determine the utilization rate over the lifetime of a listing.

Then, the product of the utilization rate over the lifetime of a listing and 365 days produced an estimate for the number of days a listing was booked each year. This process was adjusted for calculations of the number of nights a listing was booked between February 1, when the City's short-term rental regulations took effect, and November 2015, the month of the webscrape used for this analysis.
