Technical Details of Recommendation to Enter the Short-Term Rental Market

I recommend that Watershed should enter the short-term rental market with its client, and convert the 16 most profitable properties as flowing:

Table 1

Property id	City	State	Type	# Bedroom
W46	New York	NY	House	1
W66	Palo Alto	CA	House	1
W67	Palo Alto	CA	House	2
W107	Austin	TX	House	1
W108	Austin	TX	House	2
W110	Austin	TX	Apartment	2
W114	Austin	TX	Apartment	2
W120	Austin	TX	House	2
W152	Miami	FL	House	2
W155	Miami	FL	House	1
W156	Miami	FL	House	2
W160	Miami	FL	House	2
W163	Miami	FL	House	1
W164	Miami	FL	House	2
W190	San Diego	CA	Apartment	2
W192	San Diego	CA	House	2

The analysis that serves as the basis of my recommendation indicates that Watershed and its client would benefit from $885K of increased profits during the first year, and yearly profits of $789K every year thereafter if my recommendation is enacted, The initial capital investment needed to implement my recommendation would be 480K. This analysis is based on financial assumptions that were confirmed by company and industry experts, but sensitivity analyses indicate that Watershed should enter the short-term rental market with their client, even if these initial assumptions need to be revised. Below, I describe the analyses I used to arrive at my conclusion, and report the results of my sensitivity analysis that assesses how expected profits and needed capital expenditure would change if my assumptions are modified.

Analysis Summary

I modeled the relationship between nightly rental price and occupancy rate for short-term rental properties using data from current short-term rentals managed by other companies and owners. I used this model to predict the short-term rental price that would maximize profits from each of Watershed's client's properties if it were managed as a short-term rental property. The metrics I report are based on the sum of the forecasted profits that would be gained and the forecasted capital investment that would be needed if my recommendation is followed, after the following are taken into account: (1) initial furnishing costs, (2) upkeep costs, (3) internet service fees, (4) regulatory fees, (5) hospitality charges (including key service and cleaning), (6) typical duration of stay, and (7) utilities. The details of the assumptions I used are provided below (Table 1), followed by a description of the results of my sensitivity analysis.

Analysis Assumptions and Sensitivity Analysis Ranges

Table 2

Consideration	Assumed Value	Source of Original Assumed Value	Minimum Value Tested	Maximum Value Tested	Rationale for Range of Values Tested
Additional profit needed for a property to be considered "more profitable as a short-term rental"	$6,000	Watershed Financial Department	$5000	$10,000	Minus $1000 and plus $4000 of recommended value
Cost to convert property to short-term rental (includes furnishing and decorating)	$30,000	Watershed Marketing Department	$20,000	$40,000	±$10,000 of recommended value
Years to depreciate capital expenditures	5	Watershed Financial Department	3	7	±2 year of recommended value
Yearly upkeep	$6,000	Watershed Marketing Department	$5,000	$8,000	Minus $1000 and plus $2000 of recommended value
Service fees to short-term stay website (e.g. Airbnb)	20%	Watershed Marketing Department	15%	25%	±5% of recommended value
Regulatory fees (taxes and potential legal fees)	10%	Watershed Financial Department	5%	15%	±5% of recommended value
Hospitality charges (key service, cleaning, re-stocking)	$100	Watershed Financial Department	$70	$150	Minus $30 and plus $50 of recommended value
Typical stay duration (days)	3	Watershed Marketing Department	1	4	Minus 2 days and plus 1 days of recommended value
Monthly utilities per property	$300	Watershed Financial Department	$200	$400	±$100 of recommended value

As agreed upon at the beginning of the project, some issues were NOT incorporated into the analysis, but could be incorporated in the future to help optimize short-term rental rates or to further refine projected profits (Table 2):

Table 3

Factor not included in analysis	Reason for exclusion from analysis
Weekly or seasonal changes in rental prices/occupancy rates	Instructions from Project Manager
Promotions, coupons, or special events	Instructions from Project Manager
Loss in rental income while property is converted	Instructions from Project Manager

Differences in utility rates across properties	Instructions from Watershed Financial Department

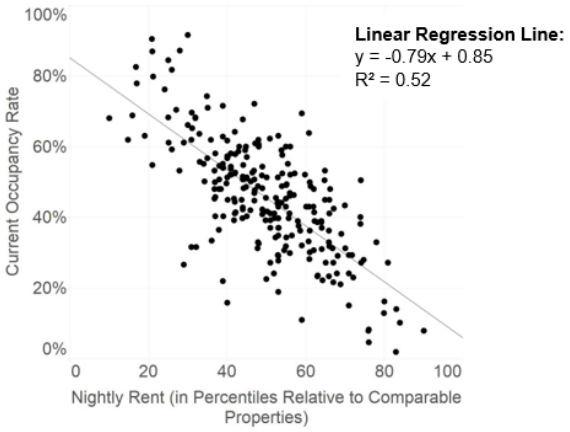
I have created a dashboard that illustrates the effects of changing these assumptions on predicted profits and required capital investment that is available to anybody on the team by request. **The minimum additional profits Watershed could earn when the assumptions were modified within the ranges described above was $120K**, if all the properties that are "more profitable" as a short-term rental are converted. **The maximum additional profits Watershed could earn when the assumptions were modified within the ranges described above was $1.613M** if all the properties that are "more profitable" as a short-term rental are converted. The modified set of parameters associated with this minimum and maximum value are provided below (Table 3). Overall, the parameter that affected profits most was **transaction fees**.

Table 4

Consideration	Worst Case Scenario	Best Case Scenario
Additional profit needed for a property to be considered "more profitable as a short-term rental"	$10,000	$5000
Cost to convert property to short-term rental (includes furnishing and decorating)	$40,000	$20,000
Years to depreciate capital expenditures	3	7
Yearly upkeep	$8,000	$5,000
Service fees to short-term stay website (e.g. Airbnb)	25%	15%
Regulatory fees (taxes and potential legal fees)	15%	10%
Hospitality charges (key service, cleaning, re-stocking)	$150	$70
Typical stay duration (days)	1	4
Monthly utilities	$400	$200

Predictive Modeling Details

I was provided with four types of information about short-term rentals of the same type (number of bedrooms, apartment or house, kitchen availability, unshared property) and in the same location as Watershed's client's 244 properties: a typical short-term nightly rental rate, the corresponding occupancy rate for the property with that rental rate, the 10^{th} percentile nightly rental rate, and the 90^{th} percentile nightly rental rate. When the typical rental prices were expressed in terms of percentiles relative to properties of the same type and in the same location—but not when they were analyzed as raw dollar values—they correlated linearly with occupancy rates:



I used the parameters of the regression line and Excel's Solver optimization function to find the rental price and occupancy rate that would maximize the profits expected from each of Watershed's client's 244 properties. Any optimized price below the 10th percentile rate was replaced with the 10th percentile rate, and any optimized price above the 90th percentile rate was replaced with the 90th percentile rate, in order to account for lack of data outside of these ranges in the linear model. These optimized rental rates were entered into a financial cash flow and profit model that computed the expected revenue from each property based on its projected occupancy rate, and the expected costs according to the financial assumptions described above.