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

I recommend that Watershed Enter the short term rental market based on the assumptions made during elicitation. The range of profits are sensitive to the assumptions however none the less profitable. Because of this sensitivity I suggest we implement this in 3 phases. Following the implementation of the first phase we can supply more accurate parameters to plan for the second phase and so on. phase 1 should implement 10 of the 41 most profitable properties and second should implement it in the next 15 most profitable properties. Each phase should have a mix of one or two bedroom, apartment and house and having a varied area to better understand region specific assumptions.

The analysis that serves as the basis of my recommendation indicates that Watershed and its client would benefit from $1.37M of increased profits during the first year, and yearly profits of $1.31 every year thereafter if my recommendation is enacted. The initial capital investment needed to implement my recommendation would be $1230000 as capital/conversion costs 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 1

Consideration	Assumed Value	Source of Original Assumed Value	Minimum Value Tested [*Entry Set 5*]	Maximum Value Tested [*Entry Set 6*]	Rationale for Range of Values Tested [*Entry Set 7*]
Additional profit needed for a property to be considered "more profitable as a short-term rental"	$6,000	Watershed Financial Department	6000	15,000	An ideal time to recover conversion costs seems between 2 to 5 years.
Cost to convert property to	$30,000	Watershed	24000	36000	+- 20%

short-term rental (includes furnishing and decorating)		Marketing Department			
Years to depreciate capital expenditures	5	Watershed Financial Department	3	7	+-2 years
Yearly upkeep	$6,000	Watershed Marketing Department	5000	7000	+- 1000 dollars
Service fees to short-term stay website (e.g. Airbnb)	20%	Watershed Marketing Department	14%	16%	https://www.airbnb.co.in/help/article/1857/what-are-airbnb-service-fees states this range
Regulatory fees (taxes and potential legal fees)	10%	Watershed Financial Department	10%	18%	Hotel rooms in US are charged 18% in US
Hospitality charges (key service, cleaning, re-stocking)	$100	Watershed Financial Department	80	120	-+ 20$
Typical stay duration (days)	3	Watershed Marketing Department	1	7	The range is large because some people look for just a night's sleep where as some people who want a homely feel in a foreign country for their relatively long stay
Monthly utilities per property	$300	Watershed Financial Department	250	350	+- 50$

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 2

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 $_0.29M_**, 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 $2.67 M**, 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 profitability cut off, length of stay

Table 3

Consideration	Value in Assumption Set that led to Minimum Profits [Entry Set 11]	Value in Assumption Set that led to Maximum Profits [Entry Set 12]
Additional profit needed for a property to be considered "more profitable as a short-term rental"	15000	6000
Cost to convert property to short-term rental (includes furnishing and decorating)	36000	24000
Years to depreciate capital expenditures	3	7
Yearly upkeep	7000	5000
Service fees to short-term stay website (e.g. Airbnb)	16%	14%
Regulatory fees (taxes and potential legal fees)	18%	10%
Hospitality charges (key service, cleaning, re-stocking)	120	80
Typical stay duration (days)	1	7
Monthly utilities	350	250

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 10th percentile nightly rental rate, and the 90th 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:

Linear Regression Line:
y = -0.79x + 0.85
R^2 = 0.52
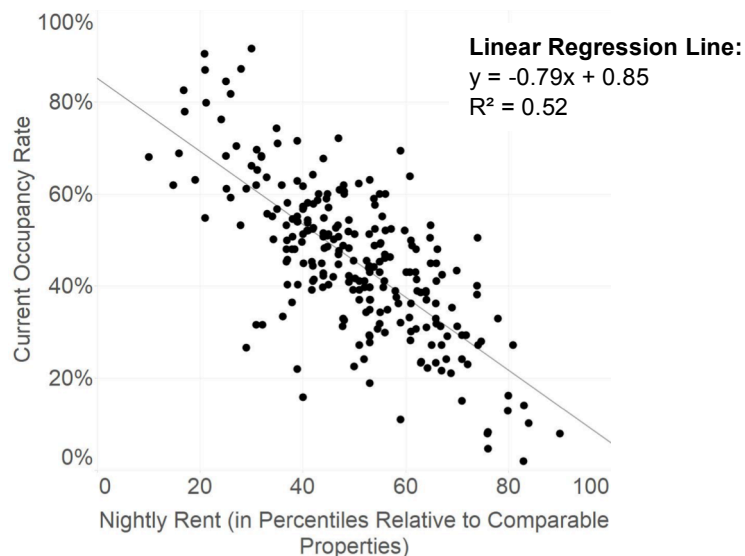
I used the parameters of the regression line and Excel's Solver optimization function to find the rental price and occupancy rate that would maximize the profits expected from each of Watershed's client's 244 properties. Any optimized price below the 10th percentile rate was replaced with the 10th percentile 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.