

## Camera Watch

### Abstract

New York City is a place that attracts millions of people every year. It is regarded as the city that never sleeps because of its constant traffic through its busy streets. This report steps out to analyze how many people actually travel New York City during its late night hours. It concludes that New York City is indeed a city that never sleeps, with constant traffic on the sidewalks of its famous 7<sup>th</sup> avenue even through the early hours of the day.

### Introduction

New York City is a place where a large portion of Americans have been to at some point in their lives. I'm one of the few upper class Americans who haven't been to the Big Apple. I am intrigued because of this and always wondered about how busy downtown New York actually is. There are currently 10+ web cameras setup on 7<sup>th</sup> Avenue in downtown New York City. For those not familiar, 7<sup>th</sup> Avenue is the home of Times Square, one of the busiest places in New York City. Those web cameras setup on 7<sup>th</sup> Avenue are in no way confidential and are available to anyone with access to an internet connection.

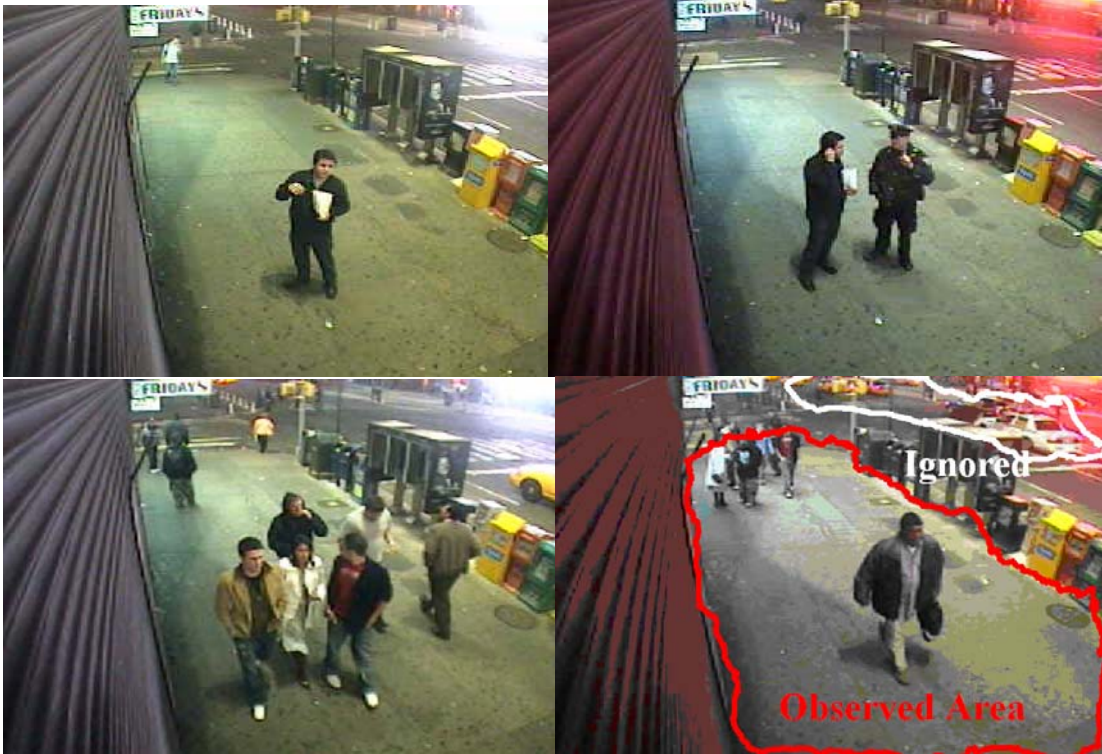
There are thousands of different studies that could be conducted from these freely available webcams but this report only focuses on one of them. The cameras in this area range from purely traffic reporting cameras to those like which I have used which focus on New York City's inhabitants and visitors. The owners of the cameras are a private company that seems to get paid by advertising around these freely accessible streaming videos. It's reported by the site that thousands a day walk by each of the randomly placed cameras. Over days, weeks, or years there's no telling how much information could be extracted from the streaming videos. Data privacy becomes a major concern for those of us who are aware of the problems with unlimited supplies of data like these webcams produce.

### Methods

Beyond individual privacy issues associated with these cameras, I attempted to gather data for nighttime situations and observe and record my findings. I utilized one of these webcams to determine how many people travel late night on 7<sup>th</sup> Avenue, and how they travel. In doing this I will attempt to gain an understanding of how little New York City residents actually sleep and how lively it is at all hours of the day.

The test was conducted on April 11<sup>th</sup> and April 26<sup>th</sup> from 2:00 AM to 5:00 AM. This time frame was chosen because before 2am and after 5 am the amount of traffic was to a substantial amount where it became useless. Recordings were taken in 5 minute intervals paying attention to the amount of people traveling in groups and their gender. The only people recorded were those that passed directly from the top left past the camera to the bottom right (and in the opposite direction) over the sidewalk. Taxi's and pedestrians too far from the camera to accurately identify were not recorded because they would be too hard to uniquely identify (A passing taxi could loop around the camera continually, skewing the data).

Sample Images:

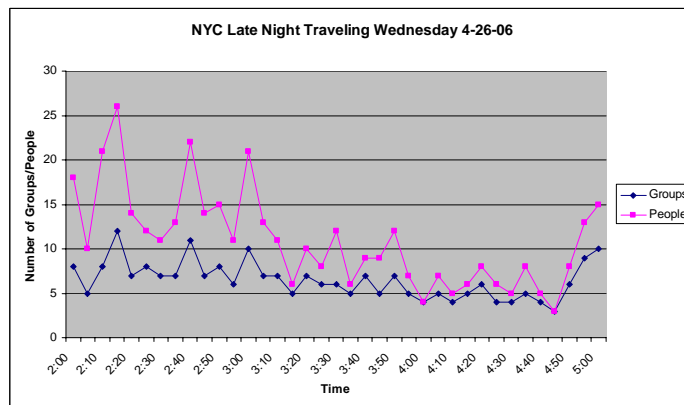
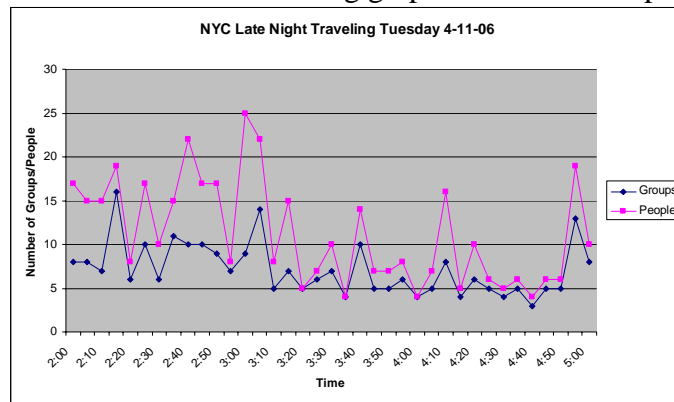


Top Left: Man Noticing Camera  
Bottom Left: Different groups

Top Right: Man pointing camera out to cop  
Bottom Right: Observational Area

Results

The results are shown in the following graphs for the 3 hour periods:



Total number of groups observed: 506  
Total number of people observed: 820  
Average number of groups per 5 min: ~7  
Average number of people per 5 min: ~11  
Peak number of groups: 16 @ 2:15 A.M. 4-11-06  
Peak number of people: 26 @ 2:15 A.M. 4-26-06  
Minimum number of groups: 3 @ 4:40 A.M. 4-11-06, 3 @ 4:45 A.M. 4-26-06  
Minimum number of people: 3 @ 4:45 A.M. 4-26-06

## **Discussion**

With the above charts and subsequent data it can be assumed that all data taken was to the best of my eye and the cameras ability. Any errors are assumed to be extremely minimal and given any other given day the data retrieval could be repeated without problem.

From the data I can hypothesize and give some conclusions of what I think is happening in NYC. It is indeed the city that never sleeps, and with that the city that drinks until they get kicked out. The traffic starting at 2 A.M. was very high compared to the next 3 hours and peaked at around 2:15 A.M. and 3:00 A.M. Both these times I believe are related to last call of bars, where all patrons are asked to leave and retreat back to their homes. This is why I believe the data spiked at these two particular points.

After around 3:20 A.M. I expected a much lower amount of traffic past this spot. It hovered on average to about 9 people between 3:00 A.M and 4:00 A.M. This was very close to the 3 hour average of ~11 people. The average didn't seem to be dieing down at all and it was only within the next half hour that I expected to see any other change. During this period the average was ~8 people, still fairly close to the average.

My original hypothesis did not have any inclination of observing data past 5:00 A.M. because that is when people start roaming the streets to their jobs. On both days there was increased traffic by almost 200% within a 10 minute period approaching 5:00 A.M.

Looking at the data set given in the graphs it is easy to see that the number of people who roam the streets never gets to zero. At the very least there is a person passing this camera once a minute. Although it's nothing compared to the hundreds who may pass during the day, it definitely keeps the sidewalks alive. People are constantly wandering the streets of New York City for whatever reason and giving it the great name it has: The City that Never Sleeps.

## **References**

1. "Earth Cam: Times Square", [online].  
<http://www.earthcam.com/usa/newyork/timessquare/index.php?cam=4&display=> 2006.