**Experiment and Metrics Design**

1. What would you choose as the key measure of success of this experiment in encouraging driver partners to serve both cities, and why would you choose this metric?

I would calculate the statistical significance of the difference in coverage between the experiment window prior periods using a p-value. The p-value would have to be less than 0.05. This would be a straight-forward and reliable method.

1. Describe a practical experiment you would design to compare the effectiveness of the proposed change in relation to the key measure of success. Please provide details on:

One practical method would be a Toll Amnesty Week. This would be well publicized to drivers in advance of the experiment and would involve reimbursement of tolls during weekdays for a routine week with no holidays, etc. Driver coverage during that period, compared to prior periods would be the basis for the comparison.

1. how you will implement the experiment

This would be company managed and promoted with established measurement protocols in place, clear prior data, and any necessary considerations addressed for consistent measurement during the experiment.

1. what statistical test(s) you will conduct to verify the significance of the observation

This is basic hypothesis testing whereby we calculate the likelihood that the results were possible considering our null hypothesis that there was no effect.

1. how you would interpret the results and provide recommendations to the city operations team along with any caveats.

If we set our significance level at a typical .05, then we would compare our calculated p-value based on our sample size and standard deviation of the prior periods to that and determine our confidence that the observed results were not random.

We would present that result with an explanation of its meaning and a financial summary of the impact of making a similar change on an ongoing basis.

Any predictions would include the stated caveat of the significance evaluation and well as an explanation that additional factors may come into play over time.

Overall, this ought to be a straight-forward opportunity to explore and quantify the cost and potential benefit of one way to achieve Ultimate’s goal.