**Abstract**

This project serves to explore the system bottlenecks of a small, family owned ATV rental company. The main objective is to reduce the average time a customer spends in the system, focusing on customer wait time as well as other areas that can be improved. This was done by collecting time studies and inputting the values into simulation software, which was run to represent the current system as well as various other possible scenarios encountered by rental companies. While creating the simulation, adaptive techniques were incorporated into the simulation. These techniques aim to increase the durability and reusability of the simulation for future use. An example of incorporating adaptive simulation is through having the simulation software draw values from an Excel spreadsheet. This example of adaptive simulation targets the efficiency of use, as values and formulas are easier to calculate and visualize in Excel than the simulation software. Through the scenarios created in the simulation software, the main system bottleneck was discovered to be the company’s trailer fleet size. Several scenarios were then created to further explore the theory and resulted in confirming it. The results of this analysis conclude that to reduce customer wait time in the system, the company should increase its fleet size by one trailer. A secondary, no cost solution is to eliminate ATV load/unload times by moving ATVs to the dunes prior to customer arrival instead of loading them on a customer by customer basis.