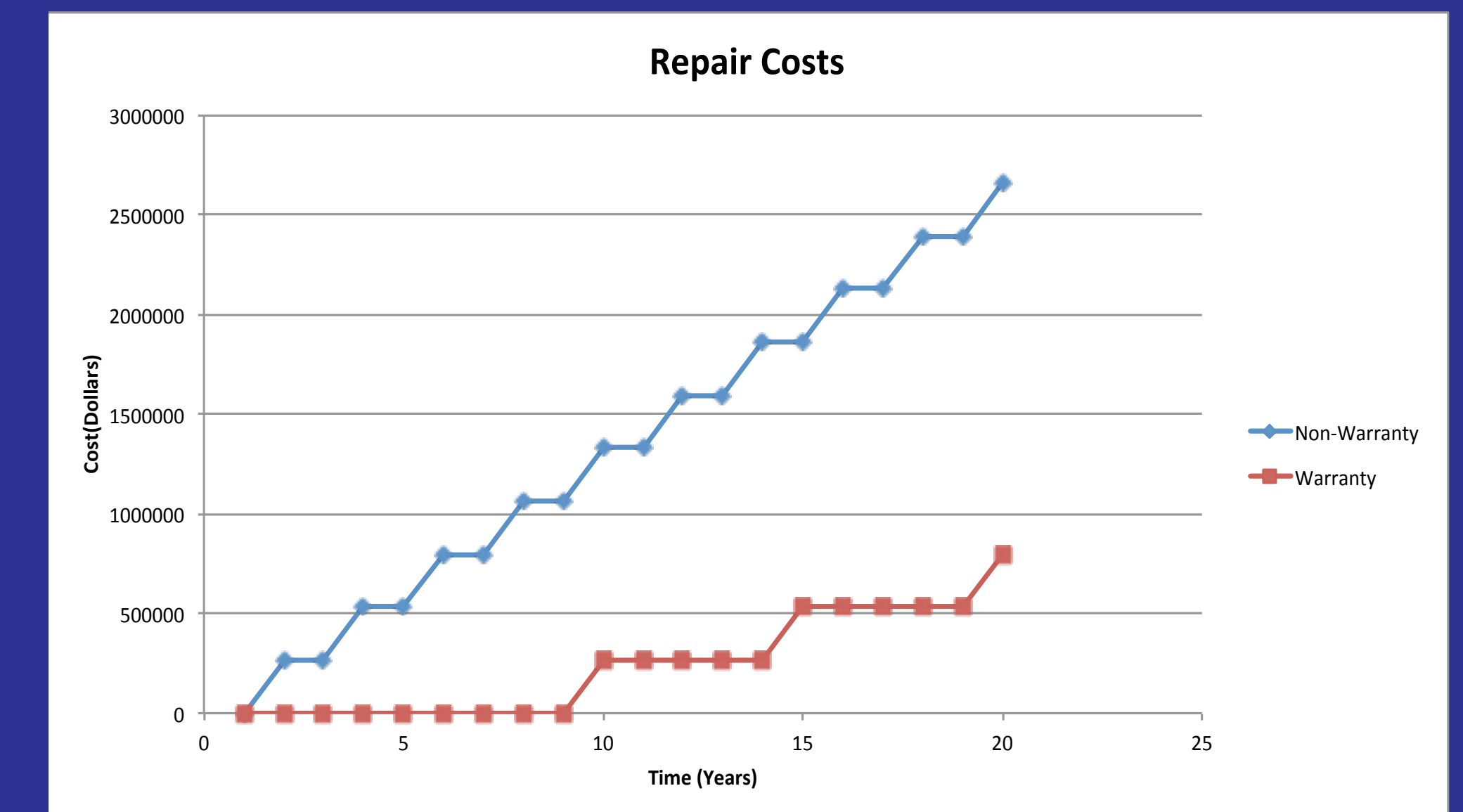
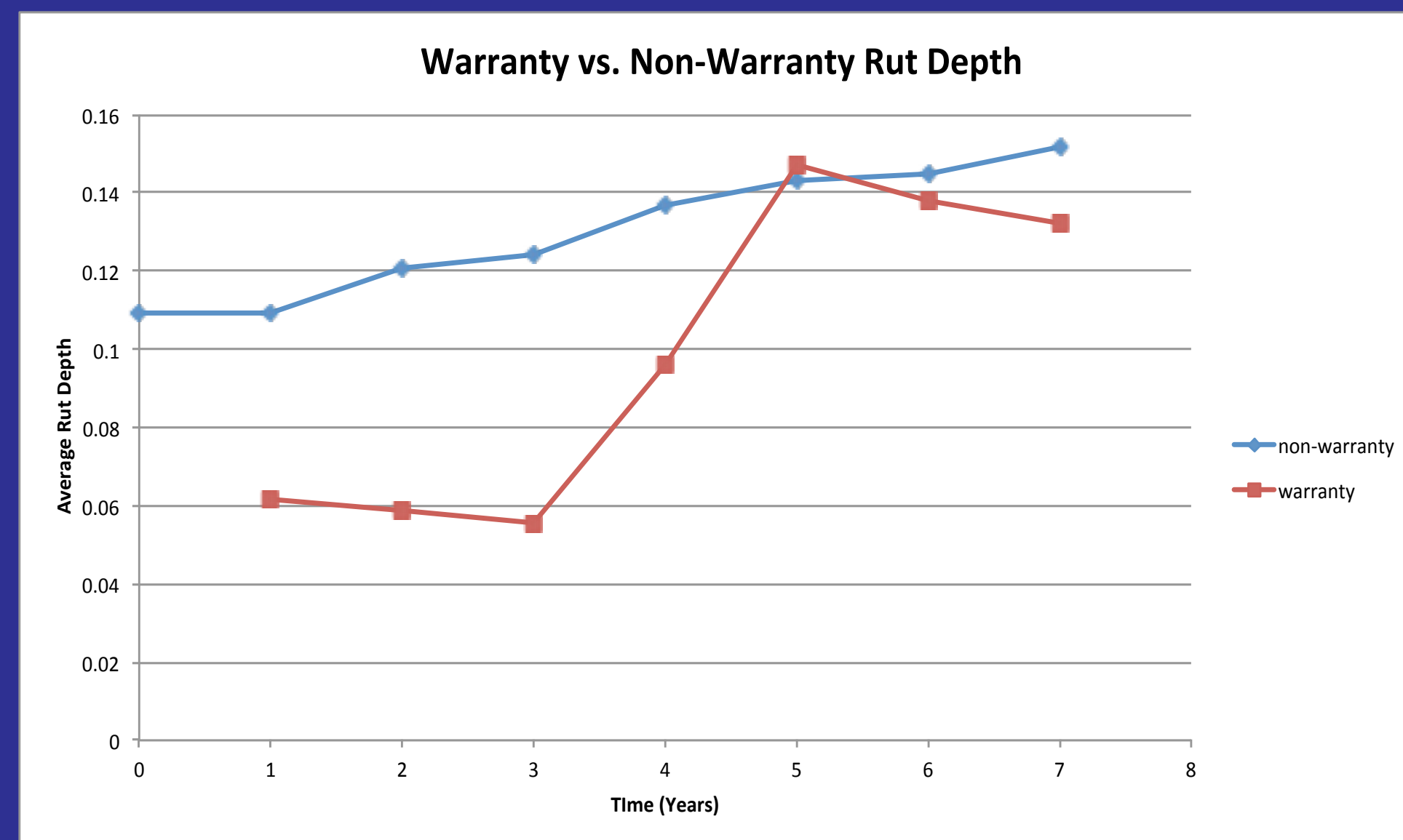


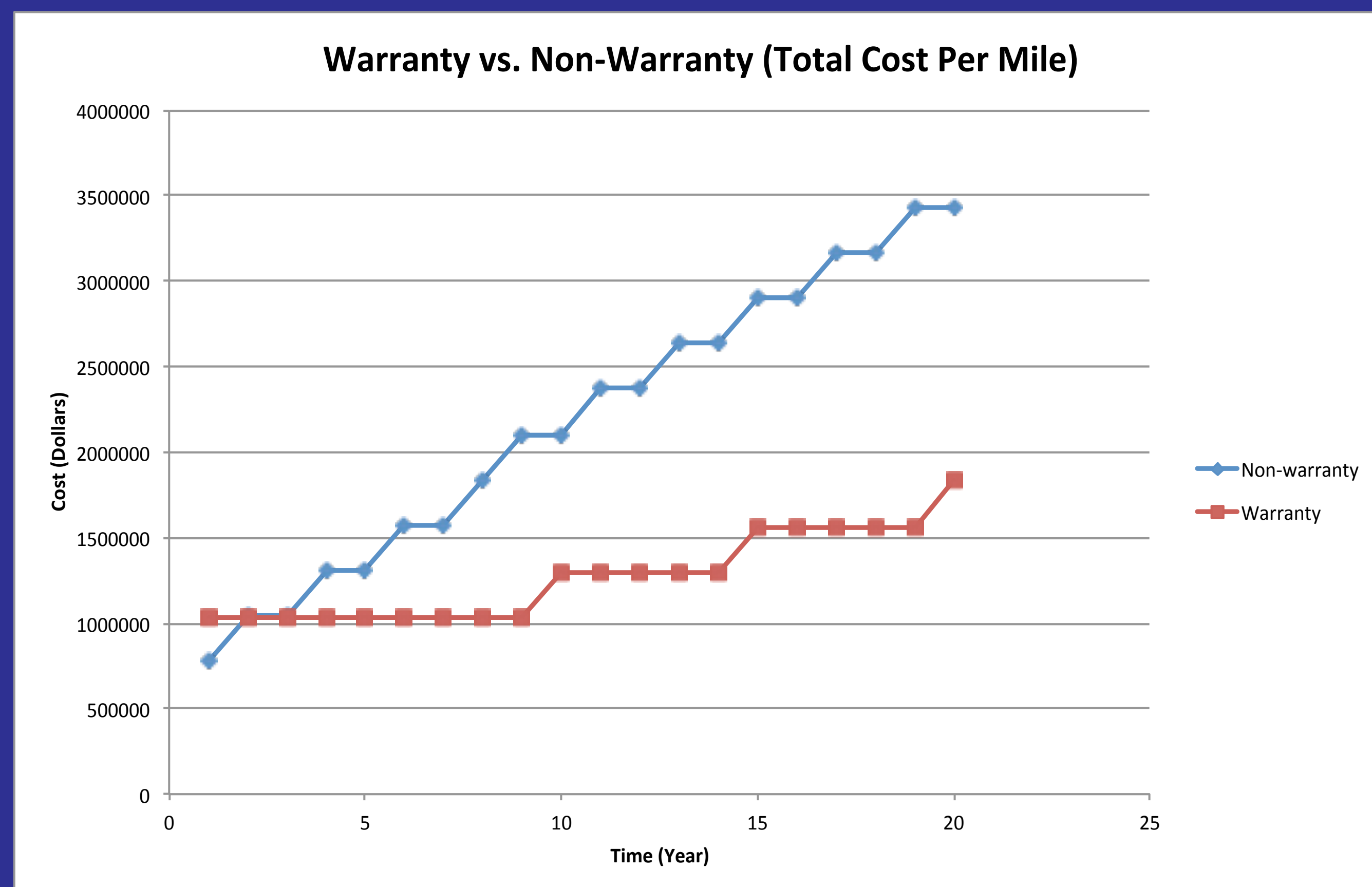
# Warranty vs. Non-Warranty Road Options

Comparing the cost effectiveness of warranty vs. non-warranty road construction options for a 100 mile section of road over a 20 year period. The non-warranty option costs \$774,571 per mile. The warranty option costs \$1,032,877 per mile, however this plan comes with a 5-year warranty in which the Department of Transportation will not be responsible for repairing the road, rather the construction company will cover all the repair costs. The Department of Transportation is required to repair the road when the rut depths reach 0.12in deep. The repair cost for each mile section of road is \$265,802 for both programs.



Rut depth was measured yearly for both the warranty and non-warranty road construction programs. The road that was funded by the warranty program had a much higher duration than that of the non-warranty program, especially in the first five years of operation.

Using data from the rut depth calculations, it was found that the warranty project, due to its durability had to be repaired less frequently than the non-warranty road.



In conclusion, the warranty program would be a more cost effective option in order to maintain a 100 mile section of road over a 20 year period. Due to the fact that the first five years of maintenance are covered through the construction company, the road is more durable therefore only having to be repaired every four years instead of every two years, and the total cost per mile is much lower than the non-warranty program when all costs are considered.

