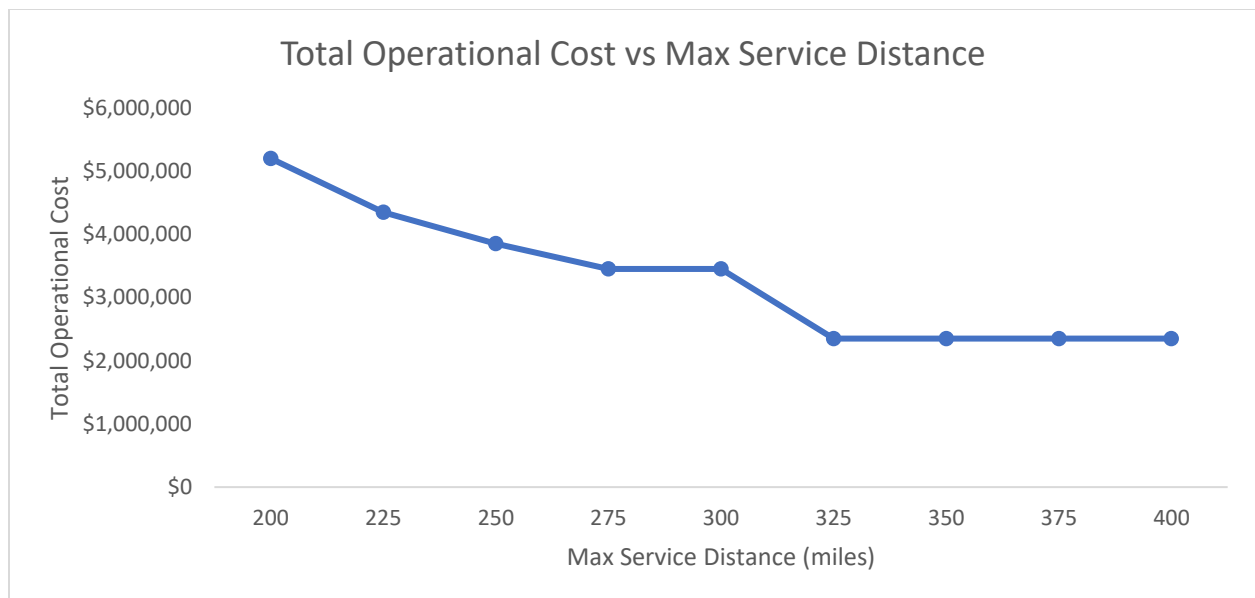East Coast Trucking

To: Manager

From: Alex Pettis

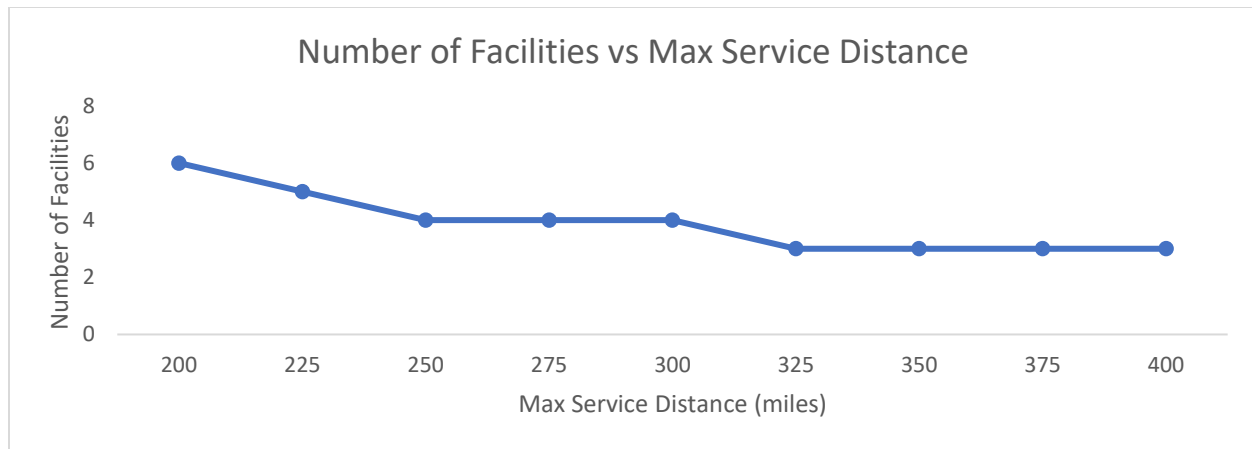Date: November 14, 2022

Dear Manager,

I am writing to inform you about the plan you proposed to me. I provided details that will be explained in the following report.

I used the information you provided to me as a starting point. I created a distance model where I tested max service distances of 400, 300, and 200 miles to find the minimum number of facilities need to reach each city. Information on those scenarios can be seen in the attached Excel file.

Then I went on to create a cost model where we tested max service distances ranged from 200 to 400 miles in 25 mile increments. We were trying to find the minimum cost to have sure each city had a facility. The following graph shows the total operational cost vs the max service distance.
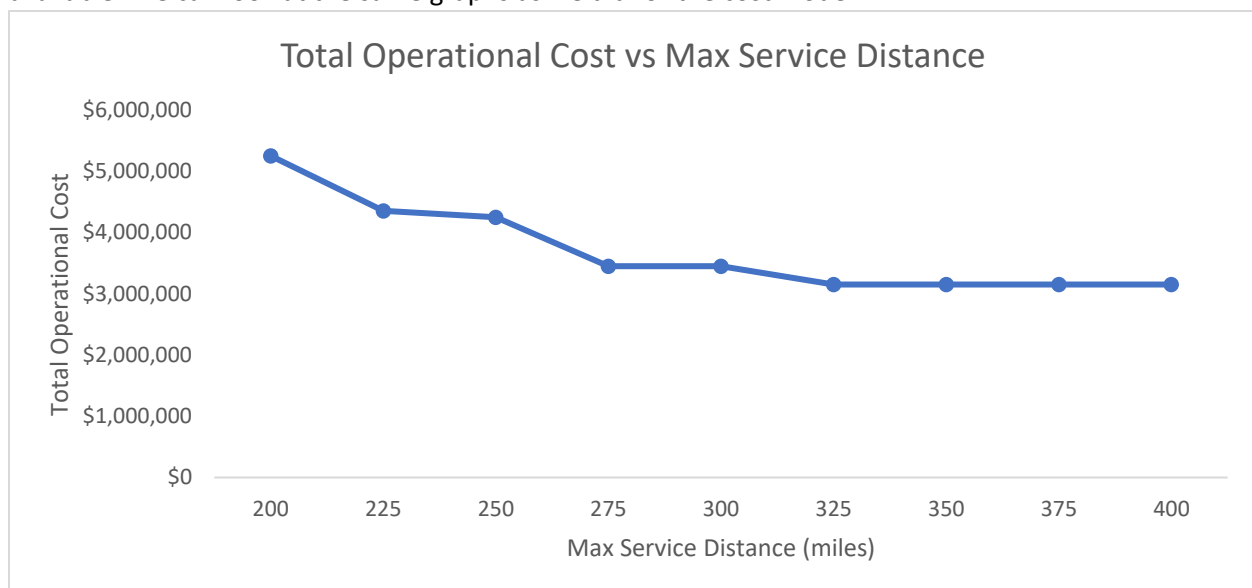

Basically, if the max service distance is increased then the total operational cost is lower. Then we can look at a graph for the number of facilities vs the max service distance.
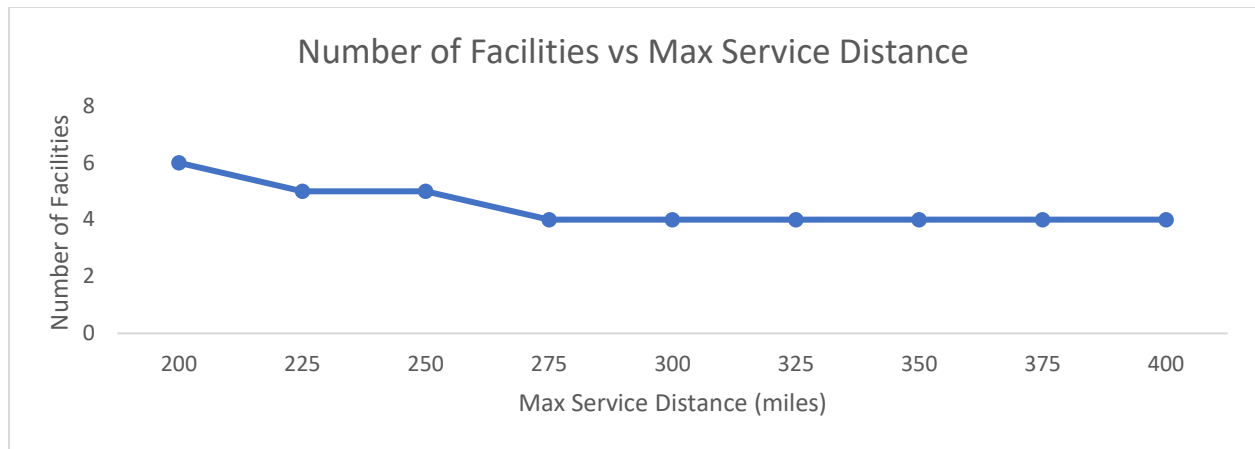
Number of Facilities vs Max Service Distance

This graph shows that if we increase our max service distance the number of facilities needed decreases. The if we look at both graphs together we can see that the best way to minimize cost is to have less facilities and to do that is to increase our max service distance to 400 miles.

Lastly, I looked at a region model once again testing max service distances ranged from 200 to 400 miles in 25 mile increments. We wanted to minimize cost as well as making sure each region had a facility available. We can look at the same graphs as we did for the cost model.

Total Operational Cost vs Max Service Distance

This graph is showing that if the max service distance is increased then the total operational cost will decrease.

Number of Facilities vs Max Service Distance

This graph shows the number of facilities vs the max service distance. We can see that the number of facilities decreases needed decreases as the max service distance increases. Once again if we look at both graphs for the region model, we can see that the best way to reduce the total operational cost is to reduce the number of facilities needed and to accomplish that is by increasing the max service distance.

I hope this report helps explain some different scenarios to reduce costs as well as making sure each city and or region has a facility. As always if you have any questions, please don't hesitate to let me know.

Thanks,

Alex Pettis