TEXAS STATE UNIVERSITY

The rising STAR *of Texas*

I1 - Drop-trailer Program Efficiency

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H-E-B

Project Background

The problem HEB is experiencing is congestion at their warehouse with trailers full of freight. Drivers who have scheduled times for drop offs (Live Load) normally wait in a queue to have their truck unloaded which could take hours. With this problem HEB implemented a "drop trailer" method which allows the driver to just drop the trailer off in the warehouse storage yard that can be picked up later when the freight has been unloaded.

Problem Statement

In order to provide good service to vendors, HEB wants an analysis of the Drop Trailer Program versus Live Load to provide concrete data on the improvement in efficiency of active/idle time as well as measurables that can confirm the program is still efficient .

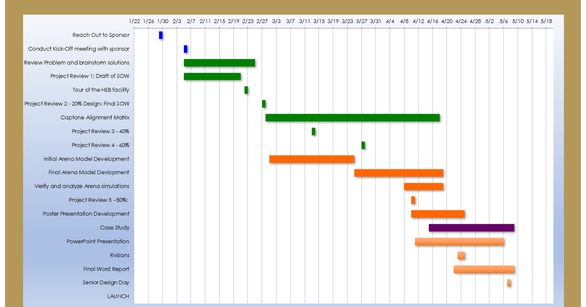
Project Purpose

The purpose is to evaluate the current state, identify gaps in the processes, identify potential constraints, and evaluate benefits of the Drop Trailer Program.

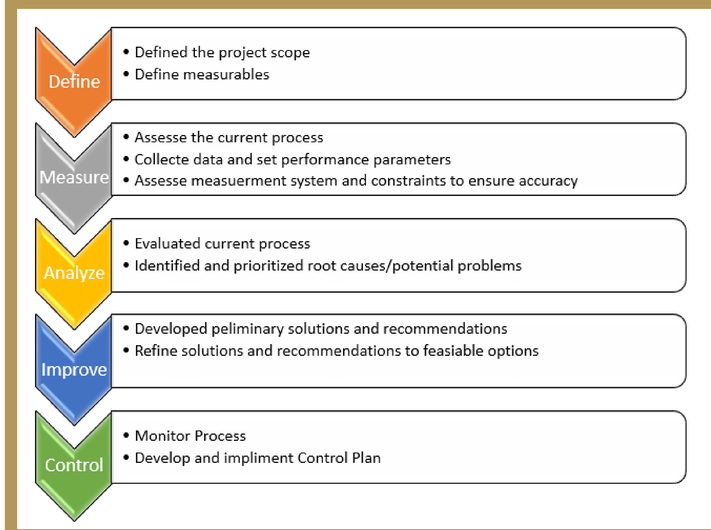
Objectives

- Evaluate current state of program and identify gaps/constraints
- Create a Simulation model to analyze Drop Trailer Program
- Propose future improvements for the Program
- Develop process to track program quality

Project Schedule

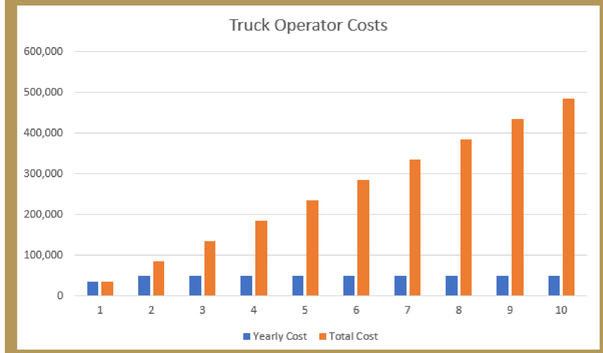


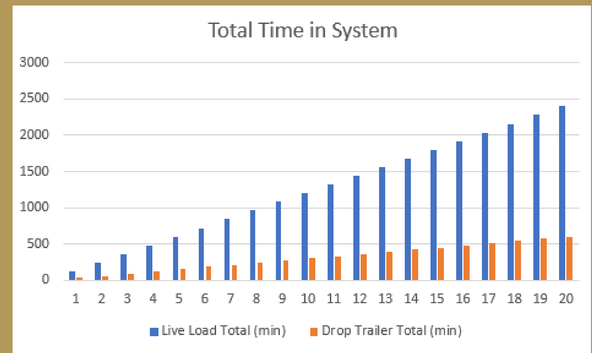
Methodology

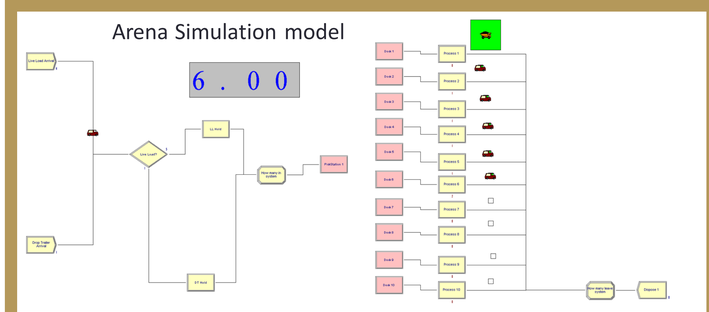


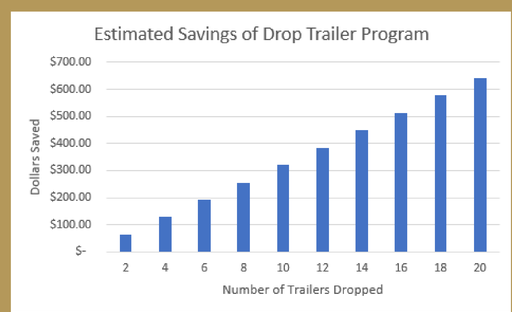
The project started with a kick off meeting where we met our project sponsor and were given some background information of the history behind HEB and were given information on the drop trailer program. The next step in completing this project was gathering and analyzing the data; the data consisted of capacities and arrival rates which were later used to set parameters in our Arena simulation model. After analyzing the data, we were able to construct the Arena model which simulates the truck and trailer process when arriving at the warehouse. After verifying the simulation logistics and testing the accuracy of the model, the final simulation was constructed. When the parameters were set and the model was simulated, we were then able to analyze the output reports and form a conclusion of the efficiency and give recommendations for the drop trailer program.

Results & Analysis









Conclusions

- With the analysis of the arrival and processing times, the Drop Trailer program has an average of 30 minutes in system as opposed to the 2 hours in system for the Live load truckers.
- The savings per trip for labor costs average to $32.06 per trip.
- Up to date and accurate data recording will be imperative to ensuring quality and checking for program problems. Moving from an all paper recording system is important system development. (shown below)

Load #	Company	Freight Content	Time In	Time Out	Time in System (last 5)	Average (last 5)
1	Gatoraid	Sports Beverage	12:30 AM	1:05 AM	35	
2	Niagra	Water	1:10 AM	1:38 AM	28	
3	Niagra	Water	1:25 AM	2:01 AM	36	
4	Niagra	Water	2:30 AM	2:55 AM	25	
5	Niagra	Water	3:30 AM	4:00 AM	30	30.8
6	Solo Cup Company	Disposable Cups	3:55 AM	4:28 AM	33	30.4
7	Niagra	Water	4:05 AM	6:00 AM	31	31
8	Niagra	Water	12:00 AM	12:27 AM	27	29.2
9	Gatoraid	Sports Beverage	2:30 AM	2:55 AM	25	29.2
10	Aquafina	Water	1:10 AM	1:37 AM	27	28.6
11	Nestle	Water	12:31 AM	1:05 AM	34	28.8
12	Nestle	Water	11:30 PM	12:05 AM	35	29.6
13	Nestle	Water	12:30 PM	1:10 AM	40	32.2

Recommendations

- Develop a more sophisticated yard tracking tool to record time in and time out by truck drivers. An example is a spread sheet was created, but a system that feeds live data into H-E-B's database will be needed for H-E-Bs increasing volume and capacity. This will improve quality control and tracking over time in system. It will also provide H-E-B with data they can use to maintain and enhance the system/process in the future. With an accurate tracking system you can ensure drop trailers are adequately powered to ensure product not lost before unloading.
- With an expansion of the Drop Trailer program, a larger lot, an increase in the available labor and trailer doors to insure proper flow through the system.
- We recommend expanding this program to other vendors that have products that qualify, have high enough volume for H-E-B to consider, have a poor on time performance rate, and have enough trailers to drop and hook
- Develop a standardized process and drop trailer agreement for onboarding vendors to have a clear understanding regarding liability. The duty of moving the trailers around the yard must be clearly spelled out, in terms of who is responsible for doing this and the involved liability as well. The freight rates and costs between the two parties must be clear and documented.