# Fleet Management Department Six Sigma Project Fuel Delivery Optimization 

February 22, 2016

## Project Details

- The Fleet Management Department manages 68 Fuel Stations and services over 300 generators with fuel. Four of these stations are rapid refill sites.
- The City of Houston uses approximately 10,000,000 gallons fuel each year from city- owned fuel stations and using the fuel retail card.


## City of Houston Fuel Sites



## Personnel and Equipment

The Fuel Management Team ensures the fuel sites are operational and in compliance.

Personnel Assigned:
Administration - 4
Repair/Maintenance/Compliance - 8
Delivery - 1
Equipment Assigned:

- Bobtail Fuel Truck (3,000 gallons) - 1
- Fuel Trucks (500 gallons) - 2
- Pickup Trucks with 90 gallons fuel tanks - 5
- Trailer with 9,000 gallon tank - 1


## Define

Problem statement :

- Fuel delivery to City owned fuel stations by a contractor costs an average of $\$ 708,000$ per year. The current practice of using the contractor is not cost effective for small loads due to a flat delivery rate.


## Project Details

Mission statement :

- Reduce the contractor cost of fuel delivery by Fleet Management taking on approximately 960 bobtail loads per year saves \$267,840 annually.


## Project Charter - Define



## Current State Process Map



## Root Cause Analysis



## Number of Deliveries



## Delivery Costs

Delivery Costs


## Measure

- Bobtail deliveries (3,700 gallons and under) are made by the contractor at a cost $\$ 426$ each
- Costs is $\$ 426$ per delivery whether it is a 3,700 gallon load to a fuel station or 50 gallons to a generator.



## Measure

- In FY2014, the contractor delivered 1,139 bobtail loads to City fuel sites.
- Total cost of such deliveries for the year was \$440,454.


## Future State Process Map



## Analyze

- The cost for Fleet to make the deliveries is $\$ 11,743$ per month or a yearly cost of $\$ 140,911$. (Including equipment, operation and personnel)
- Fleet can deliver a load of fuel for $\$ 147$


## Analyze

- Data taken with Fleet's delivery truck during the last part of FY2015, show a capability of making approximately 80 deliveries a month or 960 per year

| Column 1 | - Unleaded - Diesel - Total ${ }^{\text {- }}$ |  |  |
| :---: | :---: | :---: | :---: |
| March | 39 | 34 | 73 |
| April | 37 | 46 | 88 |
| May | 37 | 39 | 76 |
| June | 42 | 44 | 86 |

## Contractor vs. Fleet

- For the contractor to make 960 deliveries a year, it will cost $\$ 426$ per load, for a yearly cost of \$408,960
- FMD can make 960 deliveries a year at a cost \$147 dollars a load costing \$141,120.
- \$408,960 (Contractor) - \$141,120(Fleet) = \$267,840 Annual Savings



## Control

| Period | Fleet Bobtail Deliveries |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. Deliveries |  | *Contractor | Fleet | Savings |
| 1 |  | 77 | \$32,802 | \$11,319 | \$21,483 |
| 2 |  | 68 | \$28,968 | \$9,996 | \$18,972 |
| $3^{* *}$ |  | 46 | \$19,596 | \$6,762 | \$12,834 |
| 4 |  | 77 | \$32,802 | \$11,319 | \$21,483 |
| 5 |  | 70 | \$29,820 | \$10,290 | \$19,530 |
| 6 |  | 94 | \$40,044 | \$13,818 | \$26,226 |
| 7*** |  | 85 | \$36,210 | \$12,495 | \$23,715 |
| 8 ( 8 |  |  |  |  |  |
| 9 |  |  |  |  |  |
| 10 |  |  |  |  |  |
| 11 |  |  |  |  |  |
| 12 |  |  |  |  |  |
| Grand Total |  |  | \$220,242 | \$75,999 | \$144,243 |

* Contractor Cost represents the price the City would have paid if Petroleum Express had delivered the load
**Note the truck was out of service for warranty repairs from 8/26-9/21/2015


## Questions?

