Tow Truck Cost Report

Survey

Seventy-Three tow truck companies responded to the survey sent out by the Colorado Public Utilities Commission. The respondents ranged from companies that towing represents a major portion of their business to those that do towing more as an ancillary service. These towing companies primarily fell into the category of companies that do both consensual and nonconsensual tows, but there were a few that did not do any nonconsensual tows and some that only did nonconsensual tows.

The analysis to the survey responses was done to examine tow costs and to attempt to distinguish if significant cost differences exist between towing companies that just do nonconsensual tows and companies that don't do any nonconsensual tows and companies to do both consensual and nonconsensual. In addition to distinguishing towing companies on types of tows a geographic identifier was included to see if significant cost differences existed from companies in the Front Range, or those along the I-25 corridor, and Non-Front Range companies.

Analysis

Four companies were eliminated from the initial sample of 73 tow truck companies due to a lack of responses in crucial metric categories. The remaining 69 companies were further reduced to only companies that averaged at least one tow per day for an entire year, therefore any company with 364 tows or less was removed from the sample. The determination of using companies with an average of one tow per day was to focus the analysis on companies that towing reflected a significant portion of their business. This eliminated an additional 22 companies. Another eight of these companies were removed for lack of revenue data leaving 39 companies as the analysis group in which the cost per tow was derived.

The cost of each tow was calculated for the following categories;

1) Driver Cost + Gas Cost Per Tow
2) Driver Cost + Gas Cost + Average Impound Fee Per Tow
3) Driver Cost + Gas Cost + Average Impound Fee + Any Remaining Overhead Costs Per Tow = Total Cost per Tow.

1) Driver Cost + Gas Cost Per Tow

Along with the data provided within the survey a proxy was used to impute a value for benefits. The proxy value used was $356 per full time employee per month. This figure was obtained from the Bureau of Labor Statistics website, bls.gov, and reflects the national average of employee paid medical benefit premiums. This value was assumed to apply to all workers in the survey adjusted to reflect a 40 hour work week or less if applicable. For example if a worker worked only 30 hours per week the benefit was reduced to $267 or 75% of the $356.

The stated wages paid plus benefits were used to derive the driver cost per tow. This calculation reflects what the company must pay a driver for his/her time while getting to and transporting a tow. The hourly wage plus hourly benefits were multiplied by the time it takes to get to get to the vehicle to tow, load, transport, and unload . This was then divided by the number of tows to get driver cost per tow.

> Driver Cost Per Tow = [(Hourly Wage + Hourly Benefits Paid)*(Time to get to tow + load time + unload time + transport time)]/Number of Tows.

The gas cost per tow assumed a $4 per gallon of diesel times the miles driven to get to and from tow divided by the miles per gallon.

> Gas Cost Per Tow = ($4/gallon diesel) *[(Miles Driven to Tow +Distance Towed in Miles)/Miles Per Gallon)]

2) *Driver Cost + Gas Cost + Average Impound Fee Per Tow*

To further distinguish costs specific to nonconsensual towing, an impound fee per tow was added to the calculation in (1). To incorporate this fee the annual reported impound fee paid was divided by number of tows. The annual impound fee was calculated from the monthly impound rental fee reported in the survey and multiplied by 12 months

3) Total Cost Per Tow

The final cost analysis included any remaining overhead costs, which were added to the costs already calculated in (1) and (2). Within the calculation of remaining overhead costs were all other costs reported by the towing companies along with imputing again the national average for monthly medical benefits per full time employee at $356 per month. There was one caveat to the calculation of overhead costs that was attributed to tows.

As explained above, the responding towing companies most likely have other business besides towing, therefore an approximation was used to determine percentage of towing business relative to the whole business. The proxy used was the percentage of towing revenues relative to total costs. This percentage was used to discount the costs related to towing in cases where the percentage was less than 100 percent. In cases where revenues exceed costs the percentage was capped at 100 percent. After the percentage of towing was determined the value was divided by the number of tows to come up with the Total Cost Per Tow.

> Total Cost Per Tow = [Driver Cost + Gas Cost + Impound Fee + (%Towing*Total Remaining Overhead Costs)]/# of Tows

Below is a table summarizing the cost per tow for the analyzed sample of 39 companies.

Table 1: Summary of 39 Analyzed Companies

	Driver Wages/Tow	Driver Wages + Gas/Tow	Driver Wages + Gas + Impound/Tow	Total Cost Per Tow
Average	$47.46	$62.56	$67.88	$161.77
Minimum	$23.75	$27.70	$31.31	$47.69
Maximum	$124.06	$132.06	$135.34	$348.55
Median	$41.98	$56.17	$62.44	$144.62

Number of Companies = 39

Table 2: Summary of Front Range Companies

	Driver Wages/Tow	Driver Wages + Gas/Tow	Driver Wages + Gas + Impound/Tow	Total Cost Per Tow
Average	$46.87	$60.60	$66.87	$159.19
Minimum	$23.75	$27.70	$31.31	$47.69
Maximum	$124.06	$132.06	$135.34	$348.55
Median	$39.95	$56.06	$61.65	$142.06

Number of Companies = 32

Table 3: Summary of Non-Front Range Companies

	Driver Wages/Tow	Driver Wages + Gas/Tow	Driver Wages + Gas + Impound/Tow	Total Cost Per Tow
Average	$50.14	$71.50	$72.47	$173.60
Minimum	$30.53	$40.20	$40.20	$48.64
Maximum	$79.85	$103.49	$104.20	$313.19
Median	$46.74	$70.28	$70.28	$217.71

Number of Companies = 7

Table 4: Summary of Solely Non-Consensual Tows

	Driver Wages/Tow	Driver Wages + Gas/Tow	Driver Wages + Gas + Impound/Tow	Total Cost Per Tow
Average	$112.15	$123.48	$133.05	$201.64
Minimum	$100.25	$114.91	$130.77	$122.37
Maximum	$124.06	$132.06	$135.34	$274.08
Median	$112.15	$123.48	$133.05	$208.47

Number of Companies = 2 [not a large enough sample to draw statistical interpretations from]

Table 5: Summary of Consensual Tows Only

	Driver Wages/Tow	Driver Wages + Gas/Tow	Driver Wages + Gas + Impound/Tow	Total Cost Per Tow
Average	$48.07	$60.97	$61.47	$63.13
Minimum	$23.75	$34.72	$34.72	$47.69
Maximum	$76.64	$94.82	$94.82	$144.62
Median	$42.88	$57.00	$58.00	$60.13

Number of Companies = 4 [not a large enough sample to draw statistical interpretations from]

Table 6: Comparison of Averages for All Companies, Front Range, Non-Front Range, Consensual Only, and NonConsensual Only

	# of Companies	Driver Cost Per Tow	Driver + Gas Cost Per Tow	cost per tow impound included	Total Costs Per Tow
All Companies	39	$47.46	$62.56	$67.88	$161.77
Front Range	32	$46.87	$60.60	$66.87	$159.19
Non-Front Range	7	$50.14	$71.50	$72.47	$173.60
Consensual Only	4	$48.07	$60.97	$61.47	$63.13
NonConsensual Only	2	$112.15	$123.48	$133.05	$201.64

Statistical Analysis

To test if any statistical difference existed for average total cost per tow by region, Front Range versus Non-Front Range, an F-Test was conducted. The test indicated no statistical difference existed despite the averages not being equal. Given this conclusion there is evidence that there is no statistical need for a fee differential for nonconsensual tows based on location.

The F-Test at a level of significance of 5% is summarized below;

H_O: Average Total Cost Front Range = Average Total Cost Non-Front Range

H_A: Average Total Cost Front Range < Average Total Cost Non-Front Range

$F_{CALC} = 1.68$

$F_{CRITICAL} = 2.41$

Decision:
If $F_{CALC} < F_{CRITICAL}$ then Fail to Reject H_O

If $F_{CALC} > F_{CRITICAL}$ then Reject H_O

As the calculated F statistic is less than the critical F value the null hypothesis cannot be rejected and therefore the costs in the two geographic regions are <u>not</u> statistically different.

Recommendation

Given the cost analysis of the survey respondants for categories that provided enough observations, the average total cost per tow ranges around $160. To relate this cost to the the fee for nonconsensual tows of $154 plus $4.30 per mile at the calculated average distance for a tow of 11.67 rounded to 12 miles for Front Range companies and 16.2 round to 16.5 for Non-Front Range companies yield revenue collections of $201.60 and $220.95 respectively. Table 7 below reveals the dollar amount of profit before taxes and an estimate of profit after taxes per tow with the corresponding profit percentage for Front Range and Non-Front Range Companies.

Table 7: Profit From a Nonconsensual Tow of $154 Fee Plus Mileage Reimbursement for 12 Miles For Front Range Companies and 16.5 Miles for Non-Front Range Companies

	Average Total Costs	Revenue at 12 miles and 16.5 miles	Profit Before Taxes	Profit Assuming 35% Tax Rate	After Tax Profit Percentage
Front Range	$159.19	$205.60	$46.41	$30.17	18.95%
Non-Front Range	$173.60	$224.95	$51.35	$33.38	19.23%

As the table reveals a nonconsensual tow with a mileage reimbursement fee for 12 and 16.5 miles for Front Range and Non-Front Range Companies respectively leads to a healthy after tax profit. This illustration combined with the statistical analysis that costs are not significantly different from Front Range to Non-Front Range companies indicates that the current nonconsensual fee of $154 seems reasonable. The $4.30/mile charge per mile though provides an opportunity for towing companies to collect additional revenue not technically based on cost as the gas costs would range around $6 to $8 for a tow of 12 to 16.5 miles divided by 8.5 miles per gallon multiplied by $4 per gallon of diesel. Given this fact, there may be a tendency for drivers to drive unnecessarily longer distances to increase the mileage fee collected. This is possibility should not be incentivized, therefore, along with maintaining the fee at its current level of $154 per nonconsensual tow, a maximum mileage restiction should be adopted. As the gas cost per tow was the largest contributor to the cost difference from Front Range to Non-Front Range, these mileage restrictions should be set at the reported averages for the Front Range average of 12 miles and Non-Front Range average of 16.5 miles. The combination of these two facets of revenues for a nonconsensual tow leads to a maximum total fee before impound charges of $205.60 in the Front Range and $224.95 for Non-Front Range.