



*AMERICAN
PUBLIC
TRANSPORTATION
ASSOCIATION*

Impact of Rising Fuel Costs on Transit Services

Survey Results

May 2008

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Introduction

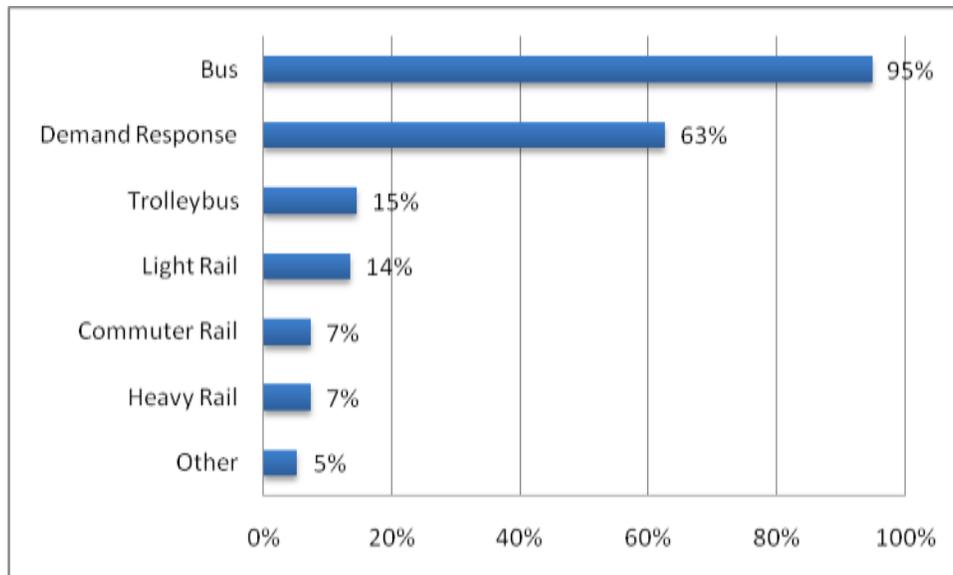
Fuel and electricity are important components of public transportation operations. On an annual basis, public transportation providers consume more than 760 million gallons of diesel and gasoline and more than 5.8 billion kilowatt hours of electricity. For every penny added to the cost of diesel and gasoline, public transportation providers face an increased cost of more than \$7.6 million dollars. Anecdotally, APTA members are increasingly reporting rapidly increasing fuel costs and resulting budget difficulties. In response to the recent surge in fuel prices, APTA is seeking to better understand the effect of these changes on member transit agencies. Members have reported surges in ridership, and at the same time, increased difficulty in maintaining existing services due to higher fuel prices. This survey seeks to understand the general levels of increases in costs experienced by agencies, typical actions taken in response to these changes, and strategies agencies are undertaking to purchase fuel.

On April 21, 2008, an online survey was sent to all APTA U.S. transit agency members' designated recipients. The survey was open to member responses through May 2, 2008. A total of 96 members responded to the survey resulting in an approximate 25 percent response rate among all APTA U.S. transit agency members.

Profile of Survey Respondents

Respondents included agencies responsible for a range of modal operations as shown in the chart below, with 95 percent operating bus (91), 14 percent light rail (13), and 7 percent for both commuter rail and heavy rail (7 each).

Figure 1 - Transit Modes Operated by Respondents



Respondents vary in size as indicated by the number of vehicles reported in operation. A total of 42 agencies operate more than 100 vehicles and 54 operate fewer than 100. A number of large agencies participated, including 8 with more than 1,000 vehicles in operation.

Table 1 – Transit Agency Respondents - Number of Vehicles in Operation

Number of Vehicles	Number of Respondents	% of Total
More than 1,000	8	8%
250 to 1,000	16	17%
100 to 250	18	19%
50 to 100	26	27%
Less than 50	28	29%

Fuel and Electricity Costs

Agencies provided detail on the cost of diesel fuel and electricity, the two primary fuel types for transit operations. Typically, for fuel purchases, agencies use a mix of purchasing strategies, including short and long-term contracts. In some cases, the results indicated below may understate the long-term effects of fuel increases that will occur as existing long-term contracts expire.

The survey results indicate a distinct difference in cost escalation between diesel fuel and electricity. While diesel prices have almost tripled in just four years, electricity prices have increased less than 20 percent. The implication is that agencies relying more heavily on diesel to power public transportation vehicles are likely facing the most immediate and substantial effects on operating budgets. Diesel is used by virtually all bus operators and some commuter rail agencies, while electricity is used by heavy rail, light rail, trolleybus and some commuter rail operators.

Price Paid for Diesel Fuel

Transit agencies have experienced a rapid increase in the price for diesel fuel. Changes in diesel fuel prices have occurred in surges with increases of 44 percent between 2004 and 2005, and again between 2007 and 2008. Overall, since 2004, the price has increased from \$1.25 to \$3.32 a gallon, an increase of 166 percent in just four years. Agencies often do not include taxes in these figures, and in some cases hold long-term contracts which can mitigate changes over the short term. As a result, in times of rising costs, prices are generally less than those often found on the retail market.

Table 2 - Diesel Fuel Costs

Year	Number of Respondents	Average price paid per gallon of diesel fuel	Percent Change from Previous Year
2004	48	\$1.25	
2005	52	\$1.80	43.5%
2006	52	\$2.15	19.7%
2007	54	\$2.31	7.1%
2008	56	\$3.32	43.8%

Price as of April 1 of each year

Price paid per kw/h for electricity (for vehicle operations)

The price of electricity, while more stable than the price of diesel, has increased significantly over the past four years. In total, the price of electricity increased 18.9 percent during the four year period covered by the survey. Again, the long-term nature of some electricity contracts, as well as the nature of the electricity market itself, may understate the potential impacts of price increases likely to occur in coming years. In 2007, the national average for electricity cost exceeded that of the numbers reported in this survey (\$0.104 compared to \$0.092) by more than 10 percent, a sign that agency electricity prices are likely to continue to climb over the next few years.

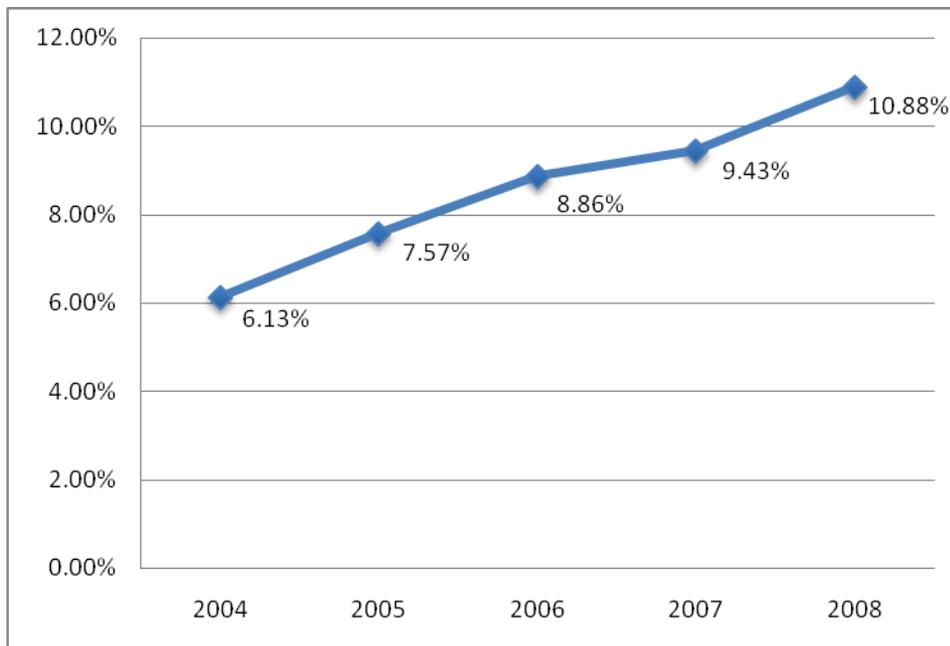
Table 3 – Electricity Costs

	Number of Respondents	Price per kw/h	Percentage Change from Previous Year
2004	13	\$0.0783	
2005	13	\$0.0858	9.6%
2006	13	\$0.0913	6.4%
2007	13	\$0.0920	0.8%
2008	12	\$0.0931	1.2%

Effect on agency operating budgets

As a result of rapid increases in fuel and electricity prices, an increasing share of agency budgets are dedicated to fuel costs. Although fuel historically represents a relatively small proportion of agency operating costs, the recent increase in fuel prices is changing the significance of fuel in agency operating budgets. In just a four year period, the share of operating costs dedicated to fuel has increased from just over 6 percent to almost 11 percent.

Figure 2 – Share of Operating Budget Dedicated to Fuel and Power



How are agencies responding?

Agencies are responding to increased fuel and electricity costs with a number of actions that are likely to either increase costs for customers or reduce the amount of service. Though some variation exists between bus and rail operations, it appears that a large number of agencies are increasing fares and delaying operating improvements.

Bus Operations

Among bus operators, the most common actions include fare increases (48%), increased state and local contributions to operations (43%), delays in operating and capital improvements (42% for each), delays or cancellation of service increases (38%), and funding transfers from capital to operating (38%). Despite increases in ridership, rising costs are contributing to service cuts and delays in service improvements. Continued increases in fuel prices could result in further reductions in service, deferred service improvements, and delays in needed capital investments not yet reflected in these results.

Table 4 – Actions by Bus Operators in Response to Higher Fuel Prices

	Yes	No	Number of Respondents
Fare increases	48%	52%	62
Increase in local/state contributions	43%	57%	58
Delay or cancellation of other operating improvements	42%	58%	59
Delay or cancellation of capital improvements	42%	58%	60
Delay or cancellation of planned service increases	38%	62%	60
Transferred funds from capital use to operations	38%	62%	58
Service cuts	19%	81%	58
Borrowed funds for operations	14%	86%	56

Rail Operations

Rail operators represent a smaller share of respondents, but indicate a similar mix of responses. Again, fare increases, delayed service improvements and in some cases, service cuts have occurred. In addition, a much higher proportion of rail operators have increased fares, representing more than two-thirds of respondents. Other common actions include delays or cancellation of capital improvements (54%), increases in state and local contributions (46%), delays or cancellation of operating improvements (43%), and transferring funds from capital to operations (36%).

Table 5 – Actions by Rail Operators in Response to Higher Fuel/Electricity Prices

	Yes	No	Number of Respondents
Fare increases	69%	31%	16
Delay or cancellation of capital improvements	54%	46%	13
Increase in local/state contributions	46%	54%	13
Delay or cancellation of other operating improvements	43%	57%	14
Transferred funds from capital use to operations	36%	64%	14
Delay or cancellation of planned service increases	29%	71%	14
Service cuts	21%	79%	14
Borrowed funds for operations	21%	79%	14

Changes in Ridership and Effect on Fare Revenue

Nearly all respondents report an increase of transit ridership over the past three years. Most attribute this increase, at least in part, to the increase in fuel costs to automobile riders.

Figure 3 – Has your transit ridership increased over the past three years?

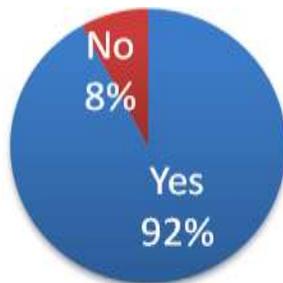


Figure 4 – Do you believe increased fuel costs for auto drivers have contributed to increases in ridership?

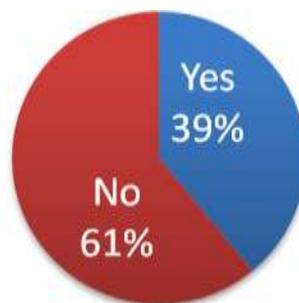


Agencies were also asked to indicate whether fare revenue is offsetting increasing fuel costs, and the proportion of increased costs that are being recovered from increased revenue. Although almost all agencies reported less than a full recovery of costs from higher fare revenue, inconsistencies in responses to this question made it difficult to reach any clear conclusion. As an example based on national averages, a penny increase in diesel and gasoline costs would add more than \$5.4 million to the cost of bus operations nationwide. Based on the current national average fare revenue of \$0.89 per unlinked bus trip, agencies would need to add more 6 million trips on an annual basis to recover just a penny increase. An increase in fuel cost of \$1 per gallon would require that agencies carry more than 600 million additional passenger trips per year, on bus services alone; an increase of more than 10 percent over current bus ridership levels. Such an increase would no doubt require additional services, and additional operating costs. It is easy to see why agencies are struggling to meet surging fuel costs.

Changes in Fuel Purchase Strategies

Approximately one-third of agencies report that changes in fuel prices have affected the way the agency purchases fuel.

Figure 5 – Have fuel price increases changed the way you purchase fuel?



Of those reporting a change in the way the agency purchases fuel, transit agencies have adjusted their procurement practices in various ways. About half have switched to longer term contracts, while the other half have switched to the spot market. About half have reduced the time period for contracts; while one-third have increased the time period of contracts. More than 7 in 10 report more difficulty in obtaining long-term contracts, while half report that cost escalators are becoming more common in fuel contracts. This will make transit systems even more vulnerable to future increases in fuel costs and will make budgetary outlooks more unpredictable.

Table 6 – Changes in Fuel Purchase Strategies

	Yes	No	Total Responded
More difficulty in obtaining long-term contracts	71%	29%	21
Changed from long-term contracts to spot market	52%	48%	23
Reduced time period of fuel contracts	50%	50%	20
Escalators more common in contracts	50%	50%	18
Switched to long-term contracts	42%	58%	24
Increased time period of fuel contracts	32%	68%	22

Respondents also reported a wide range of other actions that they are taking in response to fuel price changes. Examples include:

- No longer using bio-diesel as it is more expensive than diesel
- Hedging fuel prices through various strategies
- Purchasing through state contracts or other consortiums

Summary

This survey confirms that APTA member agencies are experiencing a rapid increase in fuel and electricity prices affecting agency budgets, fare policies, operations, and fuel purchasing strategies. The survey results indicate a distinct difference in cost escalation between diesel fuel and electricity. While diesel prices have almost tripled in just four years, electricity prices have increased less than 20 percent. Agencies relying more heavily on diesel to power public transportation vehicles, most often bus operators, are likely facing the most immediate and substantial effects on operating budgets. Agencies are responding with increased fares, delayed service improvements, deferred capital investments, additional funding from state and local sources and in some cases, service cuts. At the same time, nearly all agencies are experiencing increases in ridership. Increased fare revenue is unable to generate sufficient revenue to offset increases in fuel costs and transit agencies have had to take budgetary actions over time, including fare increases and service adjustments. Agencies are attempting to reduce fuel costs through various changes in purchasing strategy, though no clear consistency in approach is occurring. Many are also facing increased difficulty in obtaining long-term contracts, leaving agencies more vulnerable to future fuel increases. Overall, the rapid increase in fuel prices is clearly having a notable impact on agency operations.