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## Nebraska Forest Service: Determining Fire Department Operating and Suppression Costs

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## Determining Fire Department Operating Costs

Annually the chief of the fire department must meet with his Fire District Board of Directors or municipal board to establish a budget for the operation of the department for the ensuing year. Many times the chief has to justify any increase in the budget.

In order to do this is the cost of operation of each piece of fire equipment must be determined. The type vehicle and the equipment it carries will influence cost factors. Most vehicles may be categorized according to basic size and function. These general categories are:

- Category I:** ¼ ton to 1 ton, 4x2 and 4x4 grass fire trucks and equipment trucks.
- Category II:** 2 ton to 3 ton 4x2 and 4x4 pumpers.
- Category III:** 1½ to 3 ton 4x2 and 4x4 tankers.
- Category IV:** Forestry excess property vehicles, (4x2, 4x4, 6x6 grass trucks & tankers.)
- Category V:** Aerial ladder trucks with pumps.

Additionally, four basic cost areas must be considered regardless of vehicle type or size:

- Initial Cost of Vehicle.** Based on the current cost of total replacement and on a ten-year depreciation schedule.
- Operational Expense.** Includes the cost for gas, oil, tires and preventive maintenance.
- Mechanical Maintenance.** Includes repairs.
- Insurance.** Can be liability only or full coverage.

Using these factors, the annual operating costs can be determined. Examples are shown for a commercial pumper and a forest service 6x6 tanker.

### Commercial Chassis 750 g.p.m. Pumper:

Annual vehicle cost*:	\$16,168
Operational expense:	300
Maintenance expense:	365
Insurance expense:	300
Annual operating cost:	\$17,133

(\*Based on: initial vehicle cost of \$135,000 and a portable equipment cost of \$26,675.)

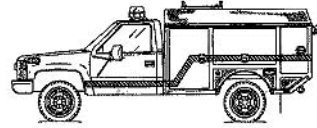
### Forest Service 6x6 Tanker:

Annual vehicle cost**:	\$2,900
Operational expense:	225
Maintenance expense:	350
Insurance expense:	185
Annual operating cost:	\$3,660

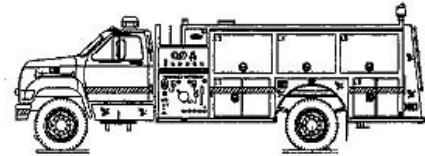
(\*\* Based on: initial vehicle cost of \$5,500, apparatus cost of \$14,000 & portable equipment cost of \$9,500.)

## Fire Equipment Examples For Each Category

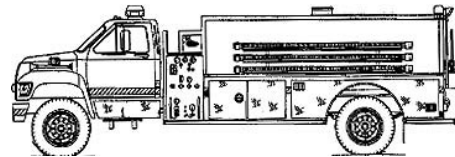
**Category I:** 4x2 and 4x4 Wildland Engines  
(Approx. Cost: \$30-70,000\*)



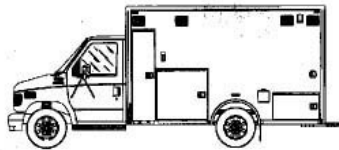
**Category II:** Structural Engines  
(Approx. Cost: \$150-250,000\*)



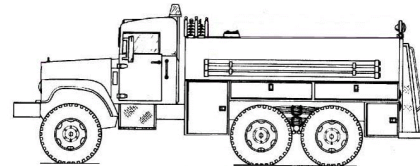
**Category III:** 4x2 and 4x4 Tankers/Tenders  
(Approx. Cost: \$80-180,000\*)



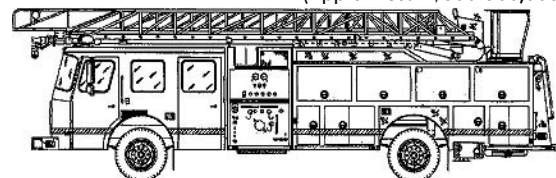
**Equipment Trucks**  
(Approx. Cost: \$80-150,000\*)



**Category IV:** 6x6 Forestry Tankers/Tenders  
(Approx. Cost: \$6-50,000\*)



**Category V:** Aerial Ladder Trucks  
(Approx. Cost: \$300-500,000\*)



(\* Approximate Costs are based on averages established from actual costs of similar vehicles.)

## Determining Fire Department Suppression Costs

Now that the annual operating cost has been determined a hourly cost of operation has to be made in order to estimate the cost of fire suppression. To do this, a record must be maintained indicating the number of usage hours each vehicle has for the year. This can be accomplished by using the recording form shown on the back of this page. Once the total number of hours has been determined, the hourly cost of operation can be determined by dividing the vehicle operating cost by the total number of hours used.

Using the examples shown, if each vehicle is used 100 hours annually, the cost per hour for each would be:

Commercial Chassis 750 gpm Pumper:	\$171.33
Forest Service 6x6 Tanker:	\$ 36.60

If the truck is used less than 100 hours, the hourly cost will be greater. If the truck is used more, the hourly cost will be less.

When determining the operational cost of the fire department any labor cost should not be included unless the department actually pays for labor.

When determining fire suppression cost, even though labor is volunteer, it should be included. This figure should be based on the national rate established in 2007 at \$19.51 per hour.

By using figures based on this formula, and the chart on the reverse side of this page, the approximate cost of combating any fire can be determined, as well as the operating cost of the fire department. At the end of the year the figures can be totaled and the cost of fire suppression will be known for the year, as well as the number of hours each vehicle was used for fire suppression.

For more information, contact:

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