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## THE US FIRE/FIRE SAFETY BUDGET FOR 2007

By Richard Schulte

A report titled "*The Total Cost of Fire in the United States*" written by Dr. John R. Hall, Jr. of the Fire Analysis and Research Division of the National Fire Protection Association (NFPA) and dated March 2010 contains some rather interesting data and information about fire and fire safety in the United States. The following are a few excerpts from this report:

*"The total cost of fire in the United States, as it is defined, is a combination of the losses caused by fire and the money spent on fire prevention, protection and mitigation to prevent worse losses, by preventing them, containing them, detecting them quickly, and suppressing them effectively. For 2007, that total cost is estimated at \$347 billion, or roughly 2.5% of U.S. gross domestic product. . ."*

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*"In 2007, economic costs of fire other than economic losses included: the cost of career fire departments (\$36.8 billion, up 156% from 1980 after adjusting for inflation), the net difference between fire-related insurance premiums paid and NFPA's estimate of economic losses eligible for insurance coverage (\$17.2 billion, up 67% from 1980 after adjusting for inflation), and new building construction costs for fire protection (\$61.5 billion, up 130% from 1980 after adjusting for inflation)."*

*"Building construction for fire protection cost an estimated **\$61.5 billion** in 2007."*

*"Part of increase in fire department cost is due to shift from volunteer to career fire departments."*

*"Building construction for fire protection cost an estimated **\$61.5 billion** in 2007."*

## Analysis and Discussion

The NFPA report on the “total cost of fire” provides a unique perspective on fire and fire protection in the United States. Rarely, if ever, is the total cost of fire and the means which we use to address fire in our society ever discussed.

Although the report provides some fairly precise numbers, it should be noted that the costs which appear in the report are really only rough estimates. There are obvious flaws in the analysis, however, these flaws do not in anyway affect the general conclusions which can be drawn from the study. **The cost figures included in the report are simply stunning.**

Some of the flaws in the analysis include the following:

- The analysis appears to assume that all fire department costs are directed toward fire suppression and fire prevention activities. Many, if not most career fire departments in the United States perform many functions unrelated to fire and fire protection. Hence, allotting 100 percent of the total cost of fire departments to fire and fire protection would not be a correct allocation of cost.
- The analysis appears to have neglected to include the cost of modifications to municipal water systems connected with fire protection, including distribution main sizes and hydrants. Municipal water system infrastructure is oversized so that it can serve as a water supply source for manual fire fighting.
- It does not appear that the maintenance and testing of fire alarm, fire detection and fire control systems (both active and passive) are included in the analysis. Maintenance and testing costs associated with these systems are not an insignificant cost in the aggregate.
- The methodology used to determine the cost of building fire protection does not appear to be sensitive to changes in code requirements. In other words, the cost of building fire protection is assumed to be a fixed percentage of building cost, without regard to more or less restrictive building code requirements.

Do we really need to spend 2.5 percent of GDP to contain fire, or is it possible to achieve the level of protection against fire with the expenditure of less capital?

Perhaps the most stunning statistic in the NFPA report is the statistic that the cost of fire/ fire protection is roughly 2.5 percent of gross domestic product (GDP).

Do we really need to spend 2.5 percent of GDP to contain fire, or is it possible to achieve the same level of protection against fire with the expenditure of less capital? Certainly, it would seem that, in the maze of fire safety regulations included in our building regulatory system, some provisions are less cost-effective and cost-efficient than others.

It seems reasonable that we should be able to reduce our capital expenditures on building fire protection from between 10 and 20 percent without having any real effect on the level of fire safety provided for the public. Based upon the estimated annual cost of building fire protection in the United States, a 10 to 20 percent reduction in fire protection costs amounts to savings of between \$6 and \$12 billion annually.

It seems reasonable that we should be able to reduce our capital expenditures on building fire protection from between 10 and 20 percent without having any effect on the level of fire safety provided for the public.

Where can we find between \$6 and \$12 billions of savings? Given the fire safety record of both commercial buildings and residential buildings provided with sprinkler protection, it would seem that we should be able to eliminate many of the redundancies included in our codes.

For too many years, we have been simply “throwing money” at the “fire problem” in the United States. It’s time to take a step back and look at what we’ve done. Capital invested in unnecessary building fire protection is capital which is simply lost. At this time in our economic history, we simply can’t afford to be wasting capital on unnecessary building fire protection.

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Perhaps the table on the next page will put building fire safety in a better perspective.

<b>Highway Fatalities-2009</b> ( <b>Source:</b> National Highway Traffic Safety Administration)	33,808
<b>Highway Fatalities-2008</b> ( <b>Source:</b> National Highway Traffic Safety Administration)	37,423
<b>Annual Average Influenza Fatalities (1976-2007)</b> ( <b>Source:</b> Center for Disease Control and Prevention)	6,309
<b>Fire Fatalities-2008 (Including Vehicle Fires)</b> ( <b>Source:</b> National Fire Protection Association)	3,320
<b>Highway Vehicle Fire Fatalities-2008</b> ( <b>Source:</b> National Fire Protection Association)	350
<b>Fire Fighter Fatalities-2009</b> ( <b>Source:</b> National Fire Protection Association)	82
<b>Lightning Fatalities-2006</b> ( <b>Source:</b> National Fire Protection Association/National Weather Service)	47
<b>Annual Average Fire Fatalities-Nursing Homes (2002-2005)</b> ( <b>Source:</b> National Fire Protection Association)	16
<b>Annual Average Fire Fatalities-Hotels/Motels (2003-2007)</b> ( <b>Source:</b> National Fire Protection Association)	11
<b>Annual Average Fire Fatalities-Mercantile Occupancies (2003-2006)</b> ( <b>Source:</b> National Fire Protection Association)	10
<b>Annual Average Fire Fatalities-Warehouses (2003-2006)</b> ( <b>Source:</b> National Fire Protection Association)	5
<b>Annual Average Fire Fatalities-Office Buildings (2000-2004)</b> ( <b>Source:</b> National Fire Protection Association)	1
<b>Annual Average Fire Fatalities-Educational Occupancies (2003-2006)</b> ( <b>Source:</b> National Fire Protection Association)	0

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