

Fire Apparatus Replacement:

The Need for a Capital Plan

FIRE SERVICE FINANCIAL MANAGEMENT

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ABSTRACT

Today's public sector fire agencies are confronted with a myriad of concerns and problems from increased workloads, reduced funding, public scrutiny of government efficiency and political oversight. One of the significant issues that is often overshadowed is the ability of local governments to replace old and worn out fire apparatus in a timely manner. Fire agencies often have to overcome inadequate, obsolete vehicles in their struggle to provide emergency services to the public. Capital projects such as vehicle replacement are typically not a priority in most governmental agency budgets.

The purpose of this research paper is to identify the current practices used by public sector fire agencies for the acquisition of replacement fire vehicles.

The research was conducted by using both descriptive and action research.

The research questions asked were:

1. Do public sector fire agencies use planned vehicle replacement programs to maintain adequate fire apparatus fleets?
2. Are there advantages to a public sector fire agency using a planned vehicle replacement program?

The research was conducted in three parts: 1) a literature review was conducted, 2) a historical review of fire apparatus replacement in the City of Fort Lauderdale was examined, and 3) a survey instrument was prepared and utilized.

The results of the research indicated that approximately half of all fire service agencies have a scheduled vehicle replacement program. The agencies with a scheduled program are able to plan for vehicle replacements and enjoy overall better vehicle service efficiency. Agencies without replacement plans cited vehicle downtime, outdated fleets, increased vehicle maintenance and lack of dependability as the results of not having a plan.

The replacement of fire vehicles should be viewed as a capital outlay, which should be planned for and funded in the budgetary process separately from the operating budget. The fire agency, after formulating all of the necessary data, must then educate their constituency and governing body on the importance of establishing a fire vehicle replacement plan that will support the agency in the accomplishment of its mission.

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Introduction

The infrastructure of our nation has been in a general state of decline for years. The list of inter-state highways, streets, water and sewer systems, public buildings needing repair or replacement is staggering. The capital needs of government are not relegated to the Federal level. Capital funding is an issue of importance to even the smallest municipality. Local governments face the dual dilemma of reduced Federal funding in such programs as Community Development Block Grants and increased demands for service by their constituents. The local government is also faced with strong opposition to increased taxes and, in some instances, voter-mandated tax reductions or tax caps.

One of the most prominent examples of equipment viewed as a capital expense at the municipal level is fire apparatus. The fire truck is the single most important piece of equipment that allows fire departments to provide emergency services to their communities. The “sticker shock” of the cost of new fire apparatus makes the purchase of new fire trucks a significant fiscal event for most municipalities.

The ability of local governments to replace old fire apparatus in a timely manner is a serious issue, as public safety is directly tied to the reliability and performance of a community’s fire apparatus.

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1. Do public sector fire agencies use planned vehicle replacement programs to maintain adequate fire apparatus fleets?
2. Are there advantages to a public sector fire agency using a planned vehicle replacement program?

Background and Significance

The Fire Service Financial Management course which is a part of the National Fire Academy's Executive Fire Officer Program, requires all students to complete an applied research paper after the classroom portion of the course. This research was conducted to identify the current budget methodologies employed by public sector fire agencies to fund the replacement of fire apparatus.

The course curriculum detailed the importance of developing budgetary plans that were sufficient for both the daily operational needs of the organization, as well as the long term infrastructure (capital) requirements.

The City of Fort Lauderdale is a municipality located in the southern portion of the state of Florida. Fort Lauderdale is the largest city in Broward

County, encompassing thirty-four square miles with a residential population of approximately 150,000 people. The city serves as the central urban center for the county's 1.3 million residents.

The city's economy is primarily tourist based, with semi-tropical weather and a beautiful six-mile long beach. The city charter provides for a commission-manager form of government, which has provided a stable governmental foundation.

The city has experienced the same infrastructure deterioration and population emigration from its downtown core, with the resultant decrease in the tax base, as have most central cities across the United States.

The city has been forced by severe budget constraints over the last six years to take drastic measures to produce a balanced budget. Layoffs, reorganizations, renegotiating labor contracts, merging departments and privatization have all been used to mitigate the fiscal dilemma.

The Fire-Rescue and Building department has been affected by the budget reductions in many ways with reduced personnel, inability to properly maintain stations and extended life expectancies on fire vehicles. The department is an all paid, full service department providing emergency service for fires, advanced life support medical transport, hazardous materials team, technical rescue team, vehicle extrications and a dive rescue team. The department also provides essential non-emergency services such as fire prevention activities, building permits and inspections, code enforcement, sprinkler and high rise tests.

The department responded to over 35,000 incidents last year with an annual increase of approximately ten percent in call volume being experienced each year. The emergency responses are handled out of twelve stations with eleven pumpers, three aerial trucks, eight rescue units, one hazardous materials unit, one fireboat and one airport crash vehicle. The department has four reserve pumpers and no reserve aerial truck.

A private contractor that operates out of city owned garage facilities provides the fire vehicle fleet's maintenance. The fire vehicles range in age from 1978 to 1993, with the majority of the vehicles being more than ten years old. The large number of responses required of the vehicles has shown that many of the vehicles are of inferior design and construction, resulting in unacceptable downtime for repairs. The frequent breakdown of vehicles has a direct impact on the department's ability to provide timely, reliable service to the community.

The city operated a fleet replacement fund that was to be responsible for funding the replacement of all city vehicles on a designated timetable. The city's fire vehicles were included in the fleet replacement fund. The replacement timetable was to be based on variable factors such as vehicle mileage, vehicle age, maintenance expenses, and vehicle role within the organization. Unfortunately, the development of many of these factors was driven by budgetary constraints and not by rational, fact-based criteria. Therefore, the life expectancies of many vehicles were unrealistically extended, so that their replacement expense was delayed.

The vehicle replacement fund charged each city department a pro-rated monthly fee on each vehicle that the department operated. The fee was calculated to provide replacement funding for a like vehicle at the end of the vehicle's life expectancy, including the effects of inflation.

The fire department paid the replacement fees as an inter-department charge out of the annual operating budget. Given the large cost of fire apparatus, the funds paid into the replacement plan were very significant, amounting to millions of dollars over the years.

The aforementioned budgetary constraints the city suffered forced the city administration to use the fleet replacement monies to fund other needs. This left the fire department in a very difficult situation: the emergency vehicles were overdue for replacement, maintenance costs were skyrocketing, vehicle downtime continued to increase, employee morale suffered because of the frustration of dealing with worn out equipment. Yet, the department had no funds available with which to purchase replacement vehicles.

As the Deputy Chief of Operations I was faced with a difficult situation, compounded by the fact that the Fire Chief left the department to become the chief in another city during this time.

I felt that the solution to the problem was educating the city administration and city commission as to the operational, fiscal and public safety impacts of not operating and maintaining adequate fire vehicles.

The city had recently hired a new fleet manager, who agreed that the replacement of the fire fleet was a top priority. The fire department implemented a multi-faceted action plan to update the vehicle fleet.

Detailed records of downtime, along with the costs of maintenance and lost personnel productivity related to switching to reserve vehicles, were kept for each vehicle. Increased response times and inefficient use of resources, such as multiple vehicle responses to a single call necessitated by the old undependable vehicles were documented. The cost of workers compensation injury claims caused by the current inadequate vehicles was tracked. All operations personnel were surveyed to develop new vehicle specifications that would best serve the department.

After many presentations and meetings, agreement was reached with the city administrators that the immediate replacement of the fire fleet was a top priority. The department used a Request for Proposal methodology to pick the vendor of the new apparatus to ensure that performance, dependability, adherence to specifications, current customer satisfaction and maintenance support, not just low bid, would be considered as purchasing criteria.

The department has ordered and is scheduled to receive nine pumpers, three aerial trucks and one Air-Light support truck by April of 1998.

I have had numerous conversations with other fire service officers that confirm that the difficult situation that I faced in replacing old fire apparatus is not an isolated incident, but rather commonplace in public sector fire agencies. The apparent breadth of this problem would indicate that the research conducted to

identify vehicle replacement methodologies used by public sector fire agencies may provide fire service organizations with information that would be useful in developing a vehicle replacement plan.

Literature Review

The purpose of this literature review is to establish a basic understanding of municipal budgeting, including the specialized aspects of budgeting for capital or infrastructure expenditures. A literature review was conducted for this research paper from sources found in the libraries of the National Fire Academy, Broward County and Broward Community College.

The first content area that must be addressed is the definition of budgets and capital budget items. The second content area examines historical data on the general status of governmental infrastructure. The third content area explores the reasons and rationales of replacing fire apparatus on a systematic schedule.

The dictionary describes budget as a noun, the total amount of money allocated for a certain purpose.

A more complex view of a governmental budget and its functions are presented by the criteria established by the Government Finance Officers Association for the Distinguished Budget Presentation Award.

- The budget as a *policy document*. As an operating plan for a government, the budget document should propose, identify, and clarify policies. These are

generally adopted by the governing body during the year and are referred to or summarized in the budget message.

- The budget as a *financial plan*. The budget process is the primary mechanism for promoting solvency, efficiency, and rational collective choices regarding the distribution and use of municipal assets and resources.
- The budget as an *operations guide*. Besides forming the basis for policy decisions, the budget provides a framework for government operations. It must go beyond purely financial dimensions to deal with the functions of the different parts of the organization and number and level of employees.
- The budget as a *communications device*. As part of a public process, the printed budget is a focal point for residents, taxpayers, and constituents. It is a major challenge to use narratives and simple charts or graphs to convey the meaning and impact of the budget to people who are not familiar with government finance.

According to McCaffery (1987), governments have three major concerns in budget preparation, which result in the development of operating budgets, capital budgets, and for the national government, fiscal policy.

- Operating budget: First and most obviously, governments are concerned with providing necessary funding for operating expenditures, that is for the day to day expenses of running the government and providing public services (salaries, utilities, supplies, and so forth). Most budget preparation effort goes into developing the operating budget to cover these expenses during the government's upcoming fiscal year.

- Capital budget: governments must also plan for capital expenditures, those large, nonrecurring expenses for major purchases of equipment (vehicles, computers, military hardware, and so forth) and construction or major renovation of governmental facilities (buildings, highways, mass transit lines, airports, and so forth).
- Fiscal policy: The national government is also concerned with fiscal policy, the conscious, intentional manipulation of total governmental revenue collections and expenditures, in order to have a particular impact on the national economy. Since only the national government's financial activities are sufficiently extensive to produce such an impact, only this government concerns itself with fiscal policy.

A more detailed accounting of categories of capital outlays is provided by Cavanaugh and Koelsch (1993). There are undoubtedly many ways to classify capital outlays; what follows was used in one small city by one of the authors.

Fleet and equipment replacement. This category is self-explanatory, but it should be pointed out that every vehicle and piece of power equipment should be included in a replacement schedule based on mileage, hours of use, or some other indicator of useful life. Postponing replacement of over-age equipment is false economy, as many local officials trying to cut corners have found. Not only do maintenance costs go up dramatically, but the reliability of the equipment goes down.

Community infrastructure. This is infrastructure that serves the community directly and is used by the public, such as playgrounds, streets, and public buildings.

Operations and maintenance infrastructure. This applies to non-public buildings and includes heating, ventilation, and air conditioning structures, plumbing, electricity, and the like.

Economic development infrastructure. These outlays might include roads to an industrial park for major improvements to connector roads.

Administrative and other. These are all other capital outlays such as computer upgrades, removal of underground storage tanks, and so forth.

Three major issues in capital budgeting have been of concern to budget decision makers and scholars in the field: the types of expenditures eligible for inclusion as capital items, the question of whether capital budgets should be separate from operating budgets, and the types of financing appropriate for capital projects. The debate over the definition of a capital expenditure has arisen in response to proposals that expenditures for such purposes as education and training be considered capital projects, because they are essentially for long-term investments in human rather than physical, capital. Opponents of this view (who outnumber the proponents) concede that the products of such activities have long-term effects, but they argue that most of the expenditures are of a regularly recurring nature, easily divided into annual appropriations. Therefore, treating them in the same way as one-time or multiyear capital spending is unnecessary and inappropriate. In addition,

separation of education expenditures, for example, from the operating budget could distort decision making in both the capital and operating budgets.

This viewpoint is related to the second issue: whether capital and operating budgets should be separate. The issue of capital and operating budget coordination is the major argument for combined budgets in state and local governments. Arguments for separation include the different nature of capital and operating expenditures, the destabilizing effect of large capital items on the annual operating budget, the potential long-range impacts of capital decisions, and the need for different types of analysis for decision making (for example, cost-benefit analysis, useful for capital projects, is usually unnecessary for operating activities). (Perry, 1989)

The financing of capital outlays by municipalities is usually accomplished by borrowing money in the private financial market, the loan requested is called a bond issue. Of course a bond, like any other loan, must be paid back, with interest, to those who invested their money. This means that in the long run, bond financing costs more than paying cash up front. It also means that the government borrowing the money must commit itself to make regular payments from some revenue source on the principal and interest owed until the bond is paid off. (Matzer, 1989)

A short review of the overall condition of governmental infrastructure in the United States is necessary to fully understand the plight often faced by local municipalities in dealing with capital needs. The Joint Economic Committee of Congress estimated that the price for infrastructure work needed in the next 15

years is \$1 trillion. Total public spending on infrastructure decreased from 3.6% of the gross national product in 1960 to 2.6% in 1985, and infrastructure investment requirements range from \$45 to \$72 billion a year. (Kee, Robins & Apostolov, 1989) The National Council on Public Works Improvement concluded that capital spending needs to increase by 100 percent each year. About half of the money spent to build, maintain, replace, and operate capital projects comes from local governments. (Rosen, 1988)

Despite the widespread attention given to the problem, remedies have been minimal and short term. According to Hansell (1987), several factors account for the relatively low priority given to the development of an infrastructure action plan.

1. Considerable portions of the infrastructure have exceeded their useful life. Extensive deterioration due to age and, and in many cases, deferred maintenance has resulted in huge expenditures being needed for repair, rehabilitation, and replacement.
2. The strong demand for capital funds to build the infrastructure required for new growth and economic development. Rapid growth has created an urgent need for public facilities, and this kind of spending is more popular and politically acceptable than spending for the existing infrastructure, which is less visible.
3. Local infrastructure investment has further suffered from severe reductions in federal aid for capital purposes. Diminishing federal funding has increased the financial burden of state and local governments and

initiated an exhaustive search for other means of financing capital projects.

4. Escalating social, educational, housing, and public safety needs have created a demand for operating funds at the expense of capital expenditures. Drug, health, police, and other critical programs are more visible and have greater political appeal than infrastructure needs, which are less visible to the public.

The combination of inflation, declining revenues, and tax and expenditure limitations have reduced the amount of revenue available for infrastructure financing. During fiscal emergencies it is a common practice to defer maintenance and reduce capital spending. Funds earmarked for capital purposes are shifted to the operating budget to maintain service levels and avoid deficits.

The detrimental results of neglecting capital projects are affecting all levels of government in the United States. According to Hansell (1987) the following is a warning to local governments regarding the infrastructure situation.

If the deterioration of infrastructure is allowed to continue, local governments will suffer adverse economic consequences. Users will come to expect breakdowns and interruptions. New development may be scared off by inadequate facilities. Failure to identify the scope and potential cost of the infrastructure problem will make it difficult for local officials to obtain financing to correct it. Unless local officials assign a high priority to infrastructure, they can

anticipate rising costs, a decline in the quality of service, the creation of potentially dangerous conditions, and a loss of public confidence.

There are serious consequences for local governments that fail to properly plan, program and budget for the full array of capital outlays for which they are responsible. One area of particular concern is the replacement of fire equipment, specifically fire vehicles or apparatus as they are often called. This is an expense that is often postponed by local officials, since there is the physical presence of a fire vehicle already and unless the vehicle is totally dysfunctional, they often do not see anything about which to be concerned.

The National Fire Protection Association's (NFPA) Fire Protection Handbook (17th edition) states that:

“In general, a 10 to 15 year life expectancy is considered normal for first line pumping engines. First line ladder trucks should have a normal life expectancy of at least 15 years. In fire departments where ladder trucks make substantially fewer responses to alarms than engines, a planned first line service of 20 years may be warranted for ladder trucks. Some smaller fire departments that have infrequent alarms operate pumping engines up to 20 years with reasonable efficiency, although obsolescence will make the older apparatus less desirable even if it is mechanically functional. In some types of service, including areas of high fire frequency, a limit of 10 years may be reasonable for first line service. The older apparatus may be maintained as part of the reserve fleet as long as it is in

good condition, but in almost no case should much reliance be placed on any apparatus that is more than 25 years of age.”

All apparatus should be tested at least annually as required by NFPA 1911, Standard for Service Tests of Pumps on Fire Department Apparatus, and NFPA 1914, Standard for Testing Fire Department Aerial Devices. These tests help determine the condition of the apparatus and potential decreasing performance over time.

According to Peterson (1992), there are several decision points that should be evaluated to determine if vehicle replacement is warranted.

- As apparatus get older, replacement parts may become more difficult to obtain, leading to longer periods of “down time.” A number of apparatus manufacturers have gone out of business in recent years and replacement parts may have to be specially built. This takes time and can be extremely expensive.
- Consideration should be given as to how critical the piece of apparatus is to your mission. What operations cannot be accomplished if that apparatus is not available?
- Maintenance records should be used to determine the cost trend in maintaining the apparatus. As costs increase and the value of the apparatus decreases, a point is reached where it is not economical to continue investing in repairs.

Peterson (1992) also notes that a factor that is often overlooked in evaluating apparatus for replacement is that the time required to develop a good set of

specifications, get competitive bids, have the apparatus built, take delivery, train personnel, and put the apparatus in service is often well over 12 months.

The American Insurance Association provides,

“In general, apparatus 15 to 20 years old should be considered for replacement. Municipal officials should institute a program that would allow for purchase of new apparatus, as that in service reaches the age for replacement.”

“Number of miles traveled and hours of pumping operation do not normally provide a basis for determining the need for replacement, but there are other factors which limit the effective and economical life, making replacement desirable. These include obsolescence due to inadequate braking, slow pick-up and acceleration resulting in a tendency not to slow up at intersections, inadequate protection of driver and men, structurally weakened chassis due to overloading. Some of the above features increase the danger to citizens and firefighters due to increased chance of accidents. Furthermore, such old apparatus becomes increasingly costly to maintain, as it is frequently difficult or impossible to obtain essential replacement parts, and generally has lower efficiency and dependability than new apparatus. It is wasteful economy not to provide apparatus and equipment of the best and most dependable type.”

The literature review provided documentation that there has been a general decline in the quality of infrastructure within the United States and that local government's ability to provide for capital outlays has been diminished.

There is a strong sense among the authors that local officials must recognize the need to prioritize, plan, fund and maintain capital projects such as the replacement of fire apparatus. Evidence was given that the replacement of fire apparatus should be a planned event based on a set of rational replacement criteria.

Procedures

This research was initiated with a computer search at the National Emergency Training Center in Emmitsburg, Maryland. The computer search was designed to gather information on literature relating to public infrastructure, governmental budgeting processes, and fire apparatus replacement data.

Relevant literature and information on the same subject areas were also obtained from the libraries of Broward County and Broward Community College, both located in Florida.

A historical review of fire apparatus replacement within the City of Fort Lauderdale was conducted with a concentration on the last three years.

Data was also collected using a survey research methodology. A survey questionnaire was constructed which contained a variety of questions relating to capital budgeting practices, fire vehicle replacement schedules, and demographics related to the specific agency. The survey questionnaire is attached as Appendix A.

The survey questionnaire was mailed to sixty fire officers randomly selected from attendees of various Executive Fire Officer classes at the National Fire Academy. The names of 100 attendees were placed in a container, names were then drawn out of the container, sight unseen, until sixty names were obtained. This was done to ensure randomness of selection of fire agencies participating in the Executive Fire Officer program. The questionnaire produced 32 usable responses, which correlates to over a 50% participation rate by individuals that were solicited for data.

There are several limitations of the survey data. The survey instrument was sent to a relatively small sample of fire agencies compared to the large number of such agencies in the United States. The number of respondents presents an even smaller representation of fire agencies and their budgeting practices.

Using only participants in the Executive Fire Officer program also creates a limitation on the data validity, as all fire agencies do not participate in the program. This limitation was accepted with the thought that more surveys would be returned from this group than from fire service officers in general.

Some questions were open-ended, which lead to subjective answers from the respondents, reflecting their perspectives on the subject matter. The complexity of evaluating existing fire apparatus does not allow for remote evaluation, therefore the fleet evaluations were provided by the survey respondents. These evaluations were subjective, as no single standard was developed to evaluate the vehicles. However, most fire officers have great

familiarity and a depth of knowledge regarding the fire fleet vehicles for which they are responsible.

Results

The survey conducted provided an interesting array of data on the current vehicle replacement methodologies used in public sector fire agencies. The responses show that just over half of the agencies have scheduled vehicle replacement programs in place. The following is an overview of the demographics of the departments that responded to the survey instrument.

The departments varied in size from 32 members to 350, with the average for the departments being 102 personnel. The data did not show any correlation between agency size and the probability of having a scheduled vehicle replacement program. The average personnel numbers for departments with a program and departments without a program were very close to the overall department average size.

The makeup of the respondents by jurisdictional type was 62% cities, 31% fire districts and 7% counties. The data showed that jurisdictional type did not have an impact on the basically 50%-50% split of organizations with and without scheduled fire vehicle replacement programs.

The majority of responding agencies, 85%, used some version of a line item budget, 8% used zero based budgeting and 7% were unsure of the budget type used.

The breakdown of agencies' use of direct purchase vs. leasing for apparatus acquisition was 85% direct purchase and 15% lease. There was no correlation between jurisdictional type or having a vehicle replacement schedule and the use of direct purchase or leasing.

All agencies surveyed had anticipated life expectancies for fire vehicles. This was interesting, as 50% of the agencies did not have a plan as how to replace the vehicles when needed, even though they had anticipated life expectancies for the vehicles.

Responding agencies with vehicle replacement programs have had the program in place from one year to nine years with the average being six years. All respondents with a vehicle replacement program reported that their programs worked well in providing and maintaining an adequate fire vehicle fleet.

The top reason given for the success of the scheduled vehicle replacement programs was that fire officials were able to anticipate and plan for vehicle replacement in a rational, systematic manner. Politics involved in apparatus purchases were minimized, as the purchases were planned events, with little emotionalism.

The agencies without a vehicle replacement plan provided only negative outcomes to the lack of a planned replacement policy. The majority cited fleets that were past their useful life span, with much downtime, increased maintenance costs, lack of dependability. Most operated with crisis management, dealing with broken apparatus one by one, with no long term plan or solution for the issues.

The agencies without a plan spoke of being at the mercy of each annual budget cycle as to whether or not replacement funding would be available.

Do public sector fire agencies use planned vehicle replacement programs to maintain adequate fire apparatus?

The survey presents documentation that currently public sector fire agencies are almost evenly divided between those that have a planned and scheduled fire vehicle replacement program and those that do not have such a program. The lack of a replacement plan in many agencies is not surprising considering the overall deterioration that governmental infrastructure and capital projects have experienced. The literature review provided many examples of and reasons for this growing national concern.

Are there advantages to public sector fire agencies utilizing a planned vehicle replacement program?

The research data from fire agencies confirms that there are advantages to using a planned vehicle replacement program. Agencies provided the following as advantages to such a program:

1. Vehicle replacements can be anticipated and planned for, with the replacement vehicle better designed to meet the agencies needs.
2. Utilizing a replacement plan that has the acceptance of the governing body and administrators minimizes political turmoil.
3. The importance of the agency and its mission are reaffirmed by the fiscal support provided by a funded replacement program.

4. The ability of the organization to provide adequate service to the public is maintained.
5. Agency officials do not have to justify large emergency funding requests to governing bodies and the public to replace worn out apparatus.
6. Maintenance costs, vehicle downtime and potential injuries to employees are all reduced by having adequate apparatus.

Discussion

The research findings of this project appear to be substantiated by the findings and studies conducted by the authors highlighted in the literature review section and by other works that were read relative to this research. The general sentiment is that at all levels of government, infrastructure and capital projects planning and funding should be an important part of the overall mission.

The survey responses left no doubt that those individuals within public sector fire agencies agreed with the above authors, and believed that capital projects such as fire vehicle replacement should be approached as a rational, planned event.

The research findings, the sentiment of the works reviewed, and the author's opinion all concur that a vehicle replacement plan is a prudent and necessary element to ensure an adequate and stable apparatus fleet. Public sector fire agencies that do not have vehicle replacement plans are more prone

to suffer political turmoil, vehicle obsolescence, high maintenance costs, more vehicle downtime, increased potential for accidents, and operational deficiencies.

Recommendations

Public sector fire agencies are responsible for many aspects of public safety and fire apparatus is an integral element to the provision of services to the public. Fire agencies cannot leave the replacement of such a mission-critical component to budgetary vagaries, political whim or the desires of the fire chief. The fire agency must become the change agent, as most governmental bodies have failed to provide leadership in the arena of infrastructure and capital projects.

The replacement of fire vehicles should be viewed as a capital outlay, which should be planned for and funded in the budgetary process separately from the operating budget.

The fire agency should review the current organizational mission, and possible mission changes in the future. How are the current apparatus contributing or not to the accomplishment of the mission? What apparatus will be needed in the future? What are the projected costs of future apparatus? Identify funding and alternative funding sources. Establish life expectancy criteria for all vehicles. The agency, after formulating all of the necessary data, must then educate their constituency and governing body on the importance of establishing

a fire vehicle replacement plan that will support the agency in the accomplishment of its mission. Once the plan is established, agency officials must ensure that it is implemented and institutionalized in the organization.

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Appendix A
Survey Instrument

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The Executive Fire Officer program at the National Fire Academy requires an applied research papers after each class. I am doing preliminary research for a paper relating to the Fire Service Financial Management class, as part of that research the following survey instrument was developed. The research project pertains to the usage of scheduled replacement budgeting for capital and non-capital items in the public sector fire service. Your time, knowledge, and cooperation are needed, so that I can complete this project. Please complete the following survey, if you request a compilation of the results will be sent to you. Thanks for your help with this research project.

Please print or type your answers.
If your answers require, please feel free to attach additional sheets.

- 1) Your name and rank

Name and address of your department.

- 2) What is the number of sworn firefighters in your department ? _____
List the services provided by your department. (Suppression, Haz Mat, Technical Rescue etc.)

- 3) What type of jurisdiction is your department ? (City, County, Fire district etc.)

- 4) What type of budget is used by your department ? (Performance, Line item, Program etc.)

- 5) Does your department budget have dollar value or life span criteria for capital vs. non-capital items ? (Such as \$500 and /or a five year life span) If so , what are the criteria ?

- 6) Does your department use lease / lease-purchase or direct purchase for large capital items ?
Please explain.

7) What are your departments anticipated life expectancies for Engines _____
Aerials/Trucks _____, Rescues/Ambulances _____ Cars

8) Does your department budget on an annual basis, funds for the future replacement of the following items ? (Yes or No) If the item is not applicable to your department, please provide a brief explanation.

A) Fire apparatus _____

B) Fire hose

C) Turn out gear

D) Fire stations _____

E) Equipment (ground ladders, hydraulic rescue tools, portable generators etc.)

F) Communication hardware (radios, repeaters, consoles etc.) _____

G) Computer-Information system (computer hardware, CAD software, networks)

9) If your department has a budgeted scheduled replacement program, has the program been effective in maintaining the equipment and /or facilities at adequate levels ? _____
How many years has the replacement program been in place ? _____

What are the reasons that the program has been successful or not ?

10) If your department does not have a budgeted replacement program, how has the lack of such a program affected your ability to maintain adequate equipment and facilities ?

