

**THE EFFECTS OF ADOPTING NFPA 1582 ON THE BAY COUNTY FIRE
DEPARTMENT**

EXECUTIVE FIRE OFFICER EXECUTIVE DEVELOPMENT

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ABSTRACT

The Bay County Fire Department (BCFD) is a combination fire service agency consisting of 117 volunteer firefighters and 18 career firefighters. The Department provides service within a 700 square mile jurisdiction from thirteen fire stations to 150,000 permanent residents and over 1,000,000 tourists annually (Hopper, 2001). The Department operates under a five year strategic plan that requires the BCFD to comply with nationally recognized regulations and standards, such as those published by the National Fire Protection Association (NFPA), when adopted and implemented by the Board of County Commissioners.

In 1993 the Florida State Legislature created Florida Statute 112.191 *Firefighters; death benefits* that defined volunteer firefighters as duly employed full-time employees whose primary duty is the prevention and suppression of fires. The inclusion of volunteers in the definition of firefighter required local governments in the State of Florida to provide death benefits via insurance policies to volunteer firefighters killed in the line of duty. Insurance underwriters providing the death benefit policies required that employers provide pre-employment and periodic medical evaluations for employees provided the death benefit coverage. To comply with the requirements, the Bay County Board of County Commissioners adopted and implemented NFPA Standard 1582 *Medical requirements for Firefighters* in 1994.

The problem created by the action of the Board was that the impact on the BCFD's organizational culture and effectiveness was not studied prior to the implementation of NFPA 1582 to determine how the Standard would effect the Department. The purpose of this applied research project was to study the impact of

the implementation of NFPA 1582 on the BCFD. The researcher used the Historical and Evaluative Research Methods to provide answers to five research questions. First the researcher asked, has the adoption of NFPA 1582 had an effect on the number of firefighter workplace injuries since 1994? Second the researcher asked, has the adoption of NFPA 1582 had an effect on the amount of revenue expended for the treatment of firefighter workplace injuries since 1994? Third the researcher asked, has the adoption of NFPA 1582 had an effect on the workman's compensation insurance premiums paid by the Department since 1994? Fourth the researcher asked, what effect has the adoption of NFPA 1582 had on the number of volunteer firefighters in the Department since 1994? Fifth the researcher asked, has the adoption of NFPA 1582 effected the Department's ability to provide a level of service commensurate with that defined in the *Bay County Strategic Plan for Fire Services*?

To answer these five questions, the researcher conducted a literature review at the Bay County Emergency Operations Center. The review included published Bay County Fire Department Budgets, Personnel Rosters, Florida State Statutes, journal articles, periodicals, research reports, local risk management plans, local statistical summaries, and official memorandums to the local Board of County Commissioners relating to the problem researched. The historical data collected from these sources was evaluated and used to draw comparisons that defined the impact of NFPA 1582 on the BCFD.

The results of the research indicate that the adoption and implementation of NFPA 1582 has not had an adverse affect on the ability of the BCFD to provide fire

services to the citizens of Bay County commensurate with the goals and objectives published in the Department's strategic plan.

The researcher's interpretation of the study results was that the adoption and implementation of NFPA 1582 has not had an adverse effect on the Bay County Fire Department's organizational effectiveness. The Department is still meeting the needs of the public in a manner consistent with the goals and objectives of the *Bay County Strategic Plan for Fire Services*. The expenditures for physicals and the payment of worker's compensation insurance premiums while increased, has not had a negative impact on the Department's revenue budgeted for expenditures in other areas. Based upon the results of the research, the author recommended that the BCFD continue to utilize NFPA 1582 as the baseline standard for the department's firefighter physical and safety programs.

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INTRODUCTION

A joint task force of members representing both the National Fire Protection Association (NFPA) Technical Committees on Fire Service Occupational Safety and Health and Firefighter Professional Qualifications began addressing medical requirements for firefighters in March 1988. A standing Subcommittee on Medical/Physical Requirements for Fire Fighters was created under the Fire Service Occupational Safety and Health Committee in 1990 and was responsible for the development of NFPA 1582 *Medical Requirements for Fire Fighters*. The Committee completed its work in January of 1992, and the first edition of NFPA 1582 was presented to the Association membership at the May of 1992 NFPA Annual Meeting in New Orleans, Louisiana (NFPA 1582, 1992).

In 1994, the Bay County Board of County Commissioners adopted, in whole, NFPA 1582 as part of the Fire Service Occupational Safety and Health section of their *Bay County, Florida Risk Management Plan for Loss Prevention and a Safe Work Environment*. To fully comply with the requirements of the Plan and meet the NFPA 1582 purpose of “ensuring that fire fighter candidates and current fire fighters are medically capable of performing their required duties” (NFPA 1582, 1992), the Bay County Fire Department began firefighter physical and safety programs. New and existing firefighters have had to comply with the requirements of NFPA 1582 since 1994. The determining factors for the adoption and continued use of this standard by the County were:

1. The 1993 creation of Florida Statute 112.191 *Firefighters; death benefits*.

2. The 1995 amendment of Florida Statute 112.181 *Firefighters, paramedics, emergency medical technicians, law enforcement officers, correctional officers; special provisions relative to certain communicable diseases.*

3. The Board of County Commissioner's goal to reduce workers compensation claims as a result of firefighter workplace injuries and illness.

The problem is the potential effects on the Bay County Fire Department were not identified prior to the adoption of NFPA 1582, and the actual effects have not been studied and documented since the Board's adoption of the standard in 1994. The purpose of this research is to determine what effects, if any, the adoption of NFPA 1582 has had on the Bay County Fire Department.

Evaluative and Historical Research methods were employed to answer five research questions. First, has the adoption of NFPA 1582 had an effect on the number of firefighter workplace injuries since 1994? Second, has the adoption of NFPA 1582 had an effect on the amount of revenue expended for the treatment of firefighter workplace injuries since 1994? Third, has the adoption of NFPA 1582 had an effect on the workman's compensation insurance premiums paid by the Department since 1994? Fourth, what effect has the adoption of NFPA 1582 had on the number of volunteer firefighters in the Department since 1994? Fifth, has the adoption of NFPA 1582 effected the Department's ability to provide services at a level commensurate with that defined in the *Bay County Strategic Plan for Fire Services*?

The researcher hypothesizes that the adoption of the standard has effected the Department in the following five ways. First, the adoption of NFPA 1582 has reduced the number of firefighter workplace injuries since 1994? Second, the adoption of NFPA

1582 has reduced the amount of revenue expended for the treatment of firefighter workplace injuries since 1994? Third, the adoption of NFPA 1582 has reduced the workman's compensation insurance premiums paid by the Department since 1994? Fourth, the adoption of NFPA 1582 has reduced the number of rostered volunteer firefighters since 1994? Fifth, the adoption of NFPA 1582 has not adversely effected the Department's ability to provide a level of service commensurate with that defined in the *Bay County Strategic Plan for Fire Services*?

BACKGROUND AND SIGNIFIGANCE

The Bay County Fire Department is a combination career/volunteer fire service organization. The Department provides fire/rescue, emergency medical, and hazardous material response services over a 700 square mile area to a population of 150,000 permanent residents and over 1,000,000 seasonal tourists (Hopper, 2001). Fire protection services are provided predominantly by the Departments 117 volunteer firefighters with an annual operating budget of two million dollars. Revenue to fund fire protection services is collected from a special property tax assessed on all unincorporated property within Bay County at a rate of one dollar for every thousand dollars of property value.

The Board of County Commissioners strongly agrees with the philosophy that fire is the great equalizer, and that fire does not distinguish between those firefighters whom are compensated and those who volunteer. The Board has conveyed this belief to its firefighters formally in the text of the Bay County Risk Management Plan (BCRMP). Martin (1994) states that:

“It shall be the policy of the Board of County Commissioners (BCC) to minimize the financial burden incurred by its citizens and tax payers as a result of fortuitous or accidental loss to which they are exposed, and to protect the assets, operations, and employees to the maximum extent from the adverse consequences of such loss, including such loss as may result from vehicular accidents, physical damage to property, injury in the workplace, fraud, criminal acts, or civil liability to members of the public, which may arise out of operations of the entity”.

To demonstrate its support of this philosophy, the BCC strongly lobbied for new state statutes and changes to existing statutes in 1993 and again in 1995 regarding firefighter safety in the workplace. The creation of Florida Statute 112.191 *Firefighters; death benefits* and the amendment of Florida Statute 112.181 *Firefighters, paramedics, emergency medical technicians, law enforcement officers, correctional officers; special provisions relative to certain communicable diseases*, expanded the definition of firefighter to include volunteers. The changes mandated that local governments provide Line of Duty Death Benefits to volunteer firefighters. To secure line of duty death benefits, insurance underwriters required the County to begin providing pre-employment physicals to firefighter candidates and annual physicals to existing firefighters that meet the requirements of Florida Statutes 112.191 and 112.181. The statutes require that examining physicians have in their possession a copy of NFPA 1001 *Medical Requirements for Fire Department Candidates* at the time of examination. The physical must meet the requirements of NFPA 1582 *Medical Requirements for Firefighters* (NFPA 1001, 1992).

Effective April of 1996, the Florida Department of Labor Employment Security, Division of Safety adopted and implemented Code of Federal Regulations (CFR) Fire Brigades Rule, C.F.R. 29 § 1910.156 (1996). The regulation requires that:

“The employer shall assure that employees who are expected to do interior structural fire fighting are physically capable of performing duties which may be assigned to them during emergencies. The employer shall not permit employees with known heart disease, epilepsy, or emphysema, to participate in fire brigade emergency activities unless a physician’s certificate of the employees’ fitness to participate in such activities is provided”.

Based upon this information alone, and without any examination of how the Departments organizational culture or effectiveness would be impacted, the County adopted and continues to use NFPA Standard 1582 as the baseline for physical requirement that must be met by all department personnel.

In December of 1998, the Federal Emergency Management Agency (FEMA), the National Volunteer Fire Council (NVFC), and the U.S. Fire Administration (USFA) published the final report titled *“Recruitment and Retention in the Volunteer Fire Service Problems and Solutions”*. The report defines eleven separate areas that are sources of volunteer recruitment and retention problems (Table 1, pg. 2). One specific area identified as a cause of recruitment and retention problems is changes to organizational culture caused by Legislation and Regulation. Consistent with the findings of the report, the Bay County Fire Department has seen reductions in the number of its volunteer firefighters when changes in organizational culture have been caused by mandated legislative and regulatory changes. Past recruiting and retention problems have

occurred, and problems will continue to occur in the future if department and community leadership do not manage organizational change more effectively. Shien (1990), as referenced in the Executive Development Student Manual (EDSM), states that, “There are several ways that leaders and managers can work to positively effect change in an organizations culture”.

The Department depends heavily on volunteer firefighters to deliver the type and level of service expected by the citizens of Bay County at the most affordable cost. The impacts of the implementation of this standard were measured to define any past, present, or future impacts on organizational effectiveness so they could be addressed.

LITERATURE REVIEW

The literature reviewed in the preparation of this applied research project included published Bay County Fire Department Budgets, Florida State Statutes, journal articles, periodicals, research reports, local risk management plans, local statistical summaries, and official memorandums to the local Board of County Commissioners regarding the problem researched.

In the collaborative final report published by FEMA, the NVFC, and the USFA identifying problems and solutions to recruiting and retaining volunteer firefighters Bush, Schaenman, and Thiel (1998) of the Tri Data Corporation identified eleven sources or causes of recruiting and retention problems. Specific to the subject of this research project is the impact on organizational culture and organizational effectiveness that occurs as a direct result of policy implementation driven by legislative and regulatory change. Bush et al. (1998) states that “Several acts by the Federal government in recent years have had an impact on recruitment and retention”. Examples referenced in

the report are the passage of the Fair Labor Standards Act (FLSA) and the Occupational Safety and Health Administration's (OSHA) Two-in/Two-out Ruling. These findings caused the researcher to examine how the creation of new state legislation and the amendment of existing state legislation leading to the local adoption of NFPA 1582 has impacted the organizational culture and organizational effectiveness of the Bay County Fire Department.

The 2000 Firefighter Fatality Report by Fahay and Leblanc (2001) published in the NFPA Journal was reviewed. The report defines the types of duty associated with firefighter deaths, the cause and nature of fatal injuries to firefighters, and the ages of the firefighters who died. Fahay et al. (2001) states that "There are health conditions that should preclude certain individuals from serving as active firefighters". Additionally Fahay et al. (1998) states that "The intent of these requirements isn't to deprive individuals of the opportunity to serve their communities, but to protect their colleagues who rely on them for their survival and protection during emergency calls". The findings of the report caused the researcher to examine what effect the adoption of NFPA 1582 has had on the number of volunteer firefighters in the Bay County Fire Department since 1994.

The local Risk Manager's Injury Summary for Bay County Florida was reviewed. The summary specifically identifies the cause and nature of injuries to Bay County Firefighters from 1993 through 2001. Martin (2001) states that "The low number of claims, and severity of claims is due to the fire departments aggressive physical requirements and safety program promoted and practiced by the Board of County Commissioners". The findings of the summary caused the researcher to evaluate if the

adoption of NFPA 1582 has had an effect on the number of firefighter workplace injuries since 1994.

Published Bay County Fire Department Revenue and Expenditure reports were reviewed. The reports detail the amount of funds expended to maintain the Bay County Fire Department's aggressive firefighter physical and safety programs as well as expenditures for treatment of firefighter injuries. The data published in the reports by Dayton (1993 -2001) assisted the researcher in determining if the adoption of NFPA 1582 has had an effect on the amount of revenue expended for the treatment of firefighter workplace injuries since 1994.

Internal memos from the County's Risk Manager to the Bay County Board of Commissioners were reviewed. The internal memos outline the legislative and regulatory changes in acted by the State of Florida in 1993 and 1995.

Martin (personnel communication, October 6, 1997) recommends the Bay County Fire Department continue utilizing the NFPA 1582 *Medical Requirements for Firefighters*, 1992 Edition as the standard for it's firefighter physical and safety programs. Martin (personnel communication, October 6, 1997) states that "Since we insure the firefighters, paid and volunteer, under the County's self-insured workers' compensation program, I consider the physicals and medical surveillance the number one measure of loss control, since the legislature has put us "on the hook" for so many illnesses and diseases of the emergency worker". Martin's position caused the researcher to evaluate if the adoption of NFPA 1582 actually has had an effect on the workman's compensation insurance premiums paid by the Bay County Fire Department since 1994.

Florida Statute 112.191 *Firefighters; death benefits* and Florida Statute 112.181 *Firefighters, paramedics, emergency medical technicians, law enforcement officers, correctional officers; special provisions relative to certain communicable diseases* were reviewed. The researcher reviewed these two administrative sources to gain an intimate understanding of the legislative and regulatory changes that initiated the implementation of NFPA 1582 as the standard for the Bay County Fire Department's firefighter physical and safety programs.

The *Bay County Risk Management Program Policies and Procedures Manual for Loss Prevention and a Safe Work Environment* was reviewed. The plan contains a section regarding Fire Service Occupational Safety and Health requiring the fire department to develop a firefighter physical and safety program. Martin (1994) states that "Each Department Director will develop with Risk Management, specific departmental operating guidelines identifying the hazards and risks associated with the employee workplace". The researcher reviewed this administrative source to identify the additional requirements placed upon volunteer firefighters for compliance with the plan. The plan requires every firefighter, career or volunteer, to have an NFPA physical prior to employment with the County. Candidates shall be certified by the fire department physician as meeting the medical requirements of Chapter three of NFPA 1582 prior to entering into a training program to become a member or performing in an emergency operational environment as a member (NFPA 1582, 1992). Once employment commences, firefighters are required to have periodic medical evaluations. Current members shall be certified annually, or at the request of either the fire department or the member, by the fire department physician as meeting the medical requirements of

Chapter three of NFPA 1582 in order to determine that the member's medical ability to continue participating in a training or emergency operational environment as a member (NFPA 1582, 1992).

A review of the department's personnel rosters from 1993 through 2001 was conducted. The purpose for reviewing these administrative documents was to establish a historical record of the departments staffing prior to and after the implementation of NFPA 1582 that could be evaluated. L. Stone (personal communication, August 17, 2001) stated that "The total number of volunteer firefighters within the Bay County Fire Department has decreased significantly since 1994 because of the implementation of NFPA 1582". While the rosters do indicate a reduction in volunteer personnel, this commonly held belief in the department has not been upheld by research. The observations and presumptions of department personnel caused the researcher to evaluate what impact the adoption of NFPA 1582 has had on the number of volunteer firefighters in the Department since 1994.

Bush et al. (1998) summed up how the impact of change on organizational culture and effectiveness can be minimized with the statement "When the time demands of volunteering are managed properly, recruitment and retention are less problematic".

PROCEDURES

The purpose of this applied research project was to evaluate the impact of the adoption and implementation of the National Fire Protection Associations (NFPA) Standard 1582 *Medical Requirements for Firefighters*. First, the Historical Research approach was used to gather data to establish a chronology of events that created the present problem. Written documents relating to the problem such as Bay County Fire

Department Standard Operating Guidelines (SOG's), the Bay County Risk Management Plan, Bay County Fire Department plans, Florida State Statutes, internal memos, internal correspondence, reports, records, summaries, and minutes of meetings were gathered during a literature review conducted at the Bay County Emergency Operations Center. The data gathered from these sources was examined and the factors, effects, and causes related to each event, and to the present problem were identified. The factors, effects, and causes were then analyzed, organized, and used to formulate five specific research questions.

Second, the five research questions were used to define the parameters of how the present problem would be evaluated using the Evaluative Research method. The impact of the adoption and implementation of NFPA 1582 on the Bay County Fire Department was evaluated against five specific criteria. First, what was the historical number of firefighter workplace injuries in the Bay County Fire Department prior to verses after the implementation of the standard in 1994? Second, what was the historical number of volunteer firefighters in the Bay County Fire Department on an annual basis prior to verses after the adoption and implementation of the standard in 1994? Third, what was the historical amount of revenue expended on an annual basis to treat Bay County firefighter workplace injuries and illnesses prior to verses after the adoption and implementation of the standard in 1994? Fourth, what was the historical amount of the County's workman's compensation insurance premiums prior to verses after adoption and implementation of the standard in 1994? Fifth, what was the Bay County Fire Departments level of service prior to verses after the implementation of the standard in 1994? Each criterion was evaluated and measured objectively and

thoroughly through comparison with historical data. All data collected was evaluated, and analyzed to create a final evaluative conclusion.

Limitations

Bush et al. (1998) states that “Retention and recruitment problems and solutions vary across regions, and even within states and counties”. The statement holds true for the evaluation of the present problem and it’s impact on the Bay County Fire Department. The research conducted and the literature reviewed for this applied research project was specific to the Bay County Fire Department and the Bay County Board of Commissioners with the exception of Florida State Statutes and the 1998 Final Report *Recruitment and Retention in the Volunteer Fire Service Problems and Solutions*. Such limitation may prevent independent replication of this research project without access to the Department specific materials outlined in the literature review.

Definitions

Combination Fire Service Agency- A fire service organization comprised of both paid and volunteer personnel.

Death Benefits- Compensation paid to the beneficiaries of fire suppression personnel killed in the line of duty.

Level of Service- A set of criteria established defining a level for services to be measured against.

Merit Pay Increase- Annual salary adjustments provided to hourly employees based upon the employee’s performance during a defined period evaluated against an established set of common criteria.

Organizational Culture- The sociological aspects of an organization that give the organization it's identity.

Organizational Effectiveness- Effectiveness of an organization measured against a given set of evaluation criteria usually defined in a strategic plan.

Risk Management Plan- A local plan adopted and approved by the local authority having jurisdiction outlining the employers plan to provide for employee safety in the workplace.

Unincorporated Property- Property within a County that lies outside the corporate limits of a municipal jurisdiction.

Worker's Compensation Modification Rate (WCMR)- A unit of measurement utilized by insurance underwriters to determine workman's compensation insurance premiums to be paid by the insured.

RESULTS

The author of the applied research project compared the existing number and types of workplace injuries, the existing number of volunteer firefighters, the current amount of revenue expended by the Bay County Fire Department for workman's compensation claims, and the current amount of revenue expended for the treatment of firefighter illness and injury against historical data from 1994 through 2001. The researcher used five criteria to evaluate the impact of NFPA 1582 on the Bay County Fire Department.

The researcher found by evaluating fire department personnel rosters from 1993 through 2001 that there has been a decline of 65.78% in the total number of volunteer firefighters within the Bay County Fire Department directly attributed to the

implementation of NFPA 1582 since 1994 (see Appendix A). Members who prior to the requirement of periodic medical evaluations were defined as active firefighters historically resigned when they failed to meet the physical requirements and were reclassified by the fire department physician as support personnel. Support personnel can not perform in emergency operations or training capacities within the fire service (NFPA 1582, 1992). The decline does not include candidates that were denied active status because they did not pass the pre-placement medical examination. The findings answer the researcher's question and support the hypothesis that the adoption of NFPA 1582 has reduced the number of volunteer firefighters since 1994 from 342 members to 117.

The researcher found by evaluating the Risk Manager's Summary of Bay County Work Place injuries from 1993 through 2001 that there has been a decline of 37.5% in the number of workplace injuries and illnesses to firefighters (see Appendix B). The findings answer the researcher's question and support the hypothesis that the adoption of NFPA 1582 has reduced the average number of annual firefighter workplace injuries since 1994 from eight to five. Additionally, the researcher found that the Department's Workers Compensation Modification Rate (WCMR) has dropped from 1.08 in 1993 to .85 in 2001. The national average WCMR is currently 1.00 (Martin, 2001). The WCMR is multiplied against \$100 dollar increments of each employee's annual salary to determine the worker's compensation premium for each employee. For example, for a firefighter who earned \$25,000 annually in 1993 the county would have paid \$270 at the WCMR rate of 1.08 for worker's compensation coverage. The same firefighter with an average three percent merit pay increase annually would be earning \$32,619 in 2001

and the county would pay \$277 at the WCMR rate of .85 for worker's compensation coverage. If the County's WCMR was at the same 1993 rate the county would be paying \$352 for worker's compensation coverage verses the \$277, an increase of \$75 annually per firefighter. Worker's compensation rates are commensurate for volunteer firefighters based upon an average compensation rate of \$1000 dollars per year. The findings reveal that the adoption of NFPA 1582 has contributed to the reduction of the county's WCMR from 1.08 to .85 thus reducing the workman's compensation insurance premiums that would have been paid today at the same WCMR rate of 1.08. However, the researcher's hypothesis that the adoption of NFPA 1582 has reduced the workman's compensation insurance premiums paid by the Department since 1994 was proven incorrect. The findings show that the county pays 298% more today in workman's compensation premiums than it did in 1993 (see Appendix C). While the adoption and implementation of NFPA 1582 has caused a reduction in the WCMR and the number of volunteers has dropped 65.78% since 1993, the number of career firefighters in the Department has quadrupled since 1993 therefore increasing the total amount of the premiums paid.

The researcher found by evaluating published Bay County Fire Department Revenue and Expenditure reports from 1993 through 2001 that the amount of revenue spent to treat firefighter workplace injuries and illness has fluxuated while expenditures for firefighter physicals has increased (see Appendix D). The findings answer the research question and fail to support the researcher's hypothesis that the adoption of NFPA 1582 has reduced the amount of revenue expended for the treatment of firefighter workplace injuries since 1994 (see Appendix D).

The researcher found by examining Bay County Fire Department Incident Reports by District from 1993 through 2001 that the average first alarm response time remained at intervals between four and five minutes with average intervals of five to ten firefighters per alarm responding. The findings answer the research question and support the researcher's hypothesis that the adoption of NFPA 1582 has not adversely effected the Department's ability to provide a level of service commensurate with that defined in the *Bay County Strategic Plan for Fire Services*.

DISCUSSION

The results compiled by the researcher during the review of Department personnel rosters from 1993 through 2001 indicate a 65.78% drop in the total number of volunteer firefighters in the Bay County Fire Department since the adoption and implementation of NFPA 1582 in 1994. The research supports the findings defined in the 1998 Final Report *Recruitment and Retention in the Volunteer Fire Service Problems and Solutions* regarding the impact on the culture and effectiveness of volunteer fire service organizations. Bush et al. states that "Several acts by the Federal government in recent years have had an impact on recruitment and retention". The researcher determined that acts by local commissions and state legislatures can also have the same effect.

The results compiled by the researcher during the review of Department incident response reports from 1993 through 2001 indicate that while the number of alarms has doubled over the last seven years, on average first alarm response times were within the strategic planing objective of five minutes with an average of five firefighters responding per alarm. The researcher found that this data does not support Bush's

position in the 1998 Final Report. Bush et al. (1998) states that “Increases in call volume have dramatically increased time demands on volunteers resulting in recruitment and retention problems”.

The results compiled by the researcher from the review of the Summary of Bay County Workplace injuries indicate that the number of workplace injuries to firefighters has reduced from an average of eight per year in 1994 down to an average of five per year in 2001. The findings support the Bay County Risk Managers Assessment that the adoption and implementation of NFPA 1582 has had a positive impact on the Fire Department. Martin (2001) states that “The low number of claims, and the severity of the claims are due to the aggressive physical requirements and safety program promoted and practiced by the Board of County Commissioners”.

The results compiled by the researcher from the review of published Bay County Fire Department Revenue and Expenditure Reports indicate that the Department spends more revenue on physicals and worker’s compensation insurance premiums, varying amounts on treating workplace injuries and illnesses. The increased expenditures are a direct result of more career personnel on staff, higher treatment costs, and higher medical evaluation costs.

Overall it is the researcher’s interpretation of the study results that the adoption and implementation of NFPA 1582 has not had an adverse effect on the Bay County Fire Department’s organizational effectiveness. The Department is still meeting the needs of the public in a manner consistent with the goals and objectives of the *Bay County Strategic Plan for Fire Services*. The expenditures for physicals and the payment of worker’s compensation insurance premiums while increased, has not had a

negative impact on the Departments revenue budgeted for expenditures in other areas. The continued use of NFPA 1582 by the Bay County Fire Department achieves the goal NFPA 1582. Fahy et al. (2001) states that “The intent of these requirements isn’t to deprive individuals of the opportunity to serve their communities, but to protect their colleagues who rely on them for their survival and protection during emergency calls”. The reduction in the total number of volunteer firefighters has had a negative impact on the organizational culture of the Bay County Fire Department. Volunteer firefighters will not admit that the standard provides for a safer operating environment. Instead, firefighters view achieving this goal as an unnecessary regulatory hurdle that has been placed in front of them for the purpose of reducing the number of volunteers.

The implications on the organization resulting from the findings of this research will be positive. The availability of data supporting the County Commission’s position that NFPA 1582 has benefited the County and the firefighters will help the department to educate it’s volunteers about the importance of the physical and safety programs.

RECOMMENDATIONS

Based upon the findings of the project, the researcher recommends that the Bay County Fire Department continue to utilize NFPA 1582 as the baseline for it’s firefighter physical and safety programs. The recommendation is supported by the research findings reflecting a reduction in the Department’s WCMR, a reduction in the Department’s number of firefighter workplace injuries and illnesses, and a reduction in the Department’s workman’s compensation insurance premium rate. Readers should take note that the savings realized by the Bay County Fire Department have been far outweighed by the benefits gained from insuring firefighter safety and reducing the

amount and type of workplace injuries. Departments that do not require current and candidate firefighters to submit to pre-placement and periodic medical evaluations are doing their personnel and their citizens a disservice.

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APPENDIX A

Appendix A- Bay County Fire Department Roster 1993-2001

| <u>Year</u> | <u>Firefighters</u> |
|-------------|---------------------|
| 1993 | 342 |
| 1994 | 303 |
| 1995 | 268 |
| 1996 | 238 |
| 1997 | 210 |
| 1998 | 186 |
| 1999 | 137 |
| 2000 | 146 |
| 2001 | 117 |

APPENDIX B

Appendix B- Summary of Bay County Workplace Injuries 1993-2000

| <u>Year</u> | <u>Injuries</u> |
|-------------|-----------------|
| 1993 | 8 |
| 1994 | 6 |
| 1995 | 4 |
| 1996 | 5 |
| 1997 | 4 |
| 1998 | 4 |
| 1999 | 6 |
| 2000 | 5 |

APPENDIX C

Appendix C- Workman's Compensation Insurance Premiums 1993-2001

| <u>Year</u> | <u>Premium</u> |
|-------------|----------------|
| 1993 | \$16,531 |
| 1994 | \$19,423 |
| 1995 | \$46,918 |
| 1996 | \$50,825 |
| 1997 | \$27,350 |
| 1998 | \$35,126 |
| 1999 | \$33,816 |
| 2000 | \$52,838 |
| 2001 | \$65,851 |

APPENDIX D

Appendix D- Firefighter Physical Expenditures vs. Treatment Expenditures

| Year | Physical Expenditures | Treatment Expenditures |
|------|-----------------------|------------------------|
| 1994 | \$34,100 | \$6,092 |
| 1995 | \$5,500 | \$2,626 |
| 1996 | \$13,829 | \$7,702 |
| 1997 | \$13,125 | \$982 |
| 1998 | \$13,115 | \$8,580 |
| 1999 | \$11,805 | \$23,387 |
| 2000 | \$14,696 | \$63 |
| 2001 | \$16,310 | \$2,711 |