Performance Improvement Strategy for the
Sycamore Township Fire Department

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June 20, 2016
Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

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Abstract

The purpose of this paper was to analyze available performance measure in order to select the most applicable method to evaluate the Sycamore Township Fire Department. The data was utilized to identify the resources and training needed to administer the chosen measure and define the stakeholders who will be involved in the process. The data was also utilized to identify on-going tasks and information required for future evaluation. An improvement plan was created based on the results of the evaluation.
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Performance Improvement Strategy for the Sycamore Township Fire Department

The sustainable success of a Fire Service Organization is reliant on the ability to identify and manage the current and future service needs of the community which it is entrusted to serve. This requires evaluating current and predicted environments and optimizing resources in order to ensure effective and efficient execution of strategic improvement planning. The purpose of this paper was to examine available performance measures and to select the optimal method to conduct a performance evaluation of the Sycamore Township Fire Department. The data was utilized to identify resources and training necessary to conduct the evaluation as well as to establish a timeline to perform the evaluation process. An improvement plan was developed based on the results of the analysis.

Background

Sycamore Township is situated 12 miles north of downtown Cincinnati between I-71 and I-75 and covers 6.4 square miles. Sycamore Township is home to approximately 20,400 residents who reside in 8,282 households (“About Sycamore Township”, 2010). The daytime population swells to approximately 120,000 people. Sycamore Township is governed by a board of trustees consisting of three trustees and a fiscal officer. “The township operates with revenue from four Joint Economic Development Zone (JEDZ) business districts and local real estate tax, which is used to provide police, fire, EMS, recreation and maintenance services” (“Thriving Business District”, 2010).

Sycamore Township accommodates 1,376 businesses. Of those businesses, 1,200 are categorized as large businesses with 200 or more employees. (“Thriving Business District”, 2010). Sycamore Township offers over three million square feet of retail space and over
750,000 square feet of office space (“About Sycamore Township”, 2010). Several large businesses operate in Sycamore Township’s thriving business district. Businesses in the township include a 1.2 million square foot, regional indoor shopping mall, a large hospital, and several high rise office buildings. Sycamore Township is also home to several churches and schools (“Regional Shopping Destination, 2010”).

**Sycamore Township Fire Department**

The Sycamore Township Fire Department (STFD) was established in October of 1995 as the result of a merger of two private fire companies; the Montgomery Community Fire Department and the Rossmoyne Community Fire Department (“Fire Department History”, 2016). The STFD is a combination career/ part-time department which employs 23 career personnel and 60 part-time personnel. The STFD has a maximum staffing of 13 personnel responding out of two fire stations. A full staffing compliment allows for the manning of two engines, one ladder truck, two front-line medic units, and one backup medic unit. In 2015, the STFD responded to 4067 calls of which 79% were for medical emergencies and the remaining 21% were related to fires or rescues (2015 Annual Statistics, 2016).

**Need For Performance Evaluation**

Sycamore Township is a thriving community whose steady growth has placed increased demands on the Sycamore Township Fire Department. This is evidenced by a 16-18% increase in population since 1999, which has resulted in a 40% increase in call volume (“Benchmark Study”, 2006). In order to adapt to the dynamic service demands of the community the STFD must evolve to meet these changing needs by analyzing the current and predicted environments utilizing performance measures.
Performance management was introduced in the late 1970’s as a means of managing behavior and results, which are viewed as the two critical elements of performance (Luizzi, 2013). Performance measurement is used primarily in business; however, it translates readily to fire service organizations. Since the 1970’s, numerous performance measures have emerged. Three performance measures were evaluated in order to determine the method that best suits the needs of the Sycamore Township Fire Department:

- The Insurance Service Organization’s (ISO) Fire Suppression Rating Schedule
- The Commission on Fire Accreditation International (CFAI) accreditation model
- Strength, Weakness, Opportunity and Threats (SWOT) Analysis.

The goal of this exercise was to identify strengths and areas of improvement with the intent to balance the current and future operations of the Sycamore Township Fire Department with the external environment by evaluating new programs and services in order to maximize organizational performance.

**Performance Measures**

**ISO Fire Suppression Rating Schedule**

The Fire Protection Rating Schedule (FSRS) is the manual used by ISO to conduct its evaluation of fire departments based on fire prevention and fire suppression capabilities (“Fire Suppression Rating Schedule Overview”, 2016). The FSRS employs nationally recognized standards from organizations such as the National Fire Protection Association (NFPA), the American Water Works Association (AWWA), and the Association of Public-Safety Communications Officials (APCO) as benchmarks against which the resources and capabilities of a fire department are compared (“Fire Suppression Rating Schedule Overview”, 2016). The
FSRS assigns a grade based on the evaluation of three areas of a community’s fire suppression operations:

- Emergency Communications
- Fire Department
- Water Supply

“The FSRS also includes a Community Risk Reduction section that recognizes community efforts to reduce losses through fire prevention, public fire safety education, and fire investigation” (“Fire Suppression Rating Schedule Overview”, 2016). ISO assigns credit points and utilizes various formulas to assign a total score on a scale of 0 to 105.5 (“Fire Suppression Rating Schedule Overview”, 2016).

**The emergency communication evaluation** is based on the communication center’s ability to receive and dispatch fire alarms. This evaluation takes into consideration the communications facilities, the performance of alarm receipt and processing, the training and certification of tele-communicators, and the dispatch circuits which are used” (Durango Fire Rescue, 2016). A maximum of 10 points can be earned in this category.

**The fire department evaluation** analyzes “the engine/ladder service companies, apparatus, equipment carried, response to fires, distribution of companies, training and available firefighters” (Windisch & Crosby, 2008). This section also reviews the department’s pump testing policies and procedures (“Fire Suppression Rating Schedule Overview”, 2016). This section essentially evaluates the department’s ability to effectively initiate an effective initial attack on a structure fire (Durango Fire Rescue, 2016). A maximum of 50 points can be earned in this category.
The Water Supply evaluation “focuses on whether the community has sufficient water supply for fire suppression beyond daily maximum consumption” ("Fire Suppression Rating Schedule Overview", 2016). This analysis examines all components of the water delivery system including the number and location of hydrants within 1000 feet of representative locations. This evaluation also factors in how often fire hydrants are flow tested and inspected. ("Fire Suppression Rating Schedule Overview", 2016). A maximum of 40 points can be earned in this category.

The Community Risk Reduction category was included in the 2012 update of the FSRS ("FSRS Revised", 2016). This section awards “extra points” for organizations which engage in effective fire prevention practices. This section evaluates fire prevention, fire safety education and fire investigation, ("Fire Suppression Rating Schedule Overview", 2016). A maximum of 5.5 points can be earned in this category.

Advantages

The only cost to the STFD for the ISO evaluation is a $100 fee to obtain the FSRS ("Fire Suppression Rating Schedule Overview", 2016). The fire department benefits from the information received from the ISO provided consultant’s review of the fire services. ISO recoups their cost by adding them to insurance premiums (Smeby, 2006). Another advantage is that improvements needed to lower the ISO grade would benefit the residents and businesses of the township by lowering their insurance rates. This could provide justification to the township administration of the need to obtain additional resources during budget talks.

Disadvantages

The FSRS states: “The Schedule is a fire insurance rating tool, and is not intended to analyze all aspects of a comprehensive public fire protection program. It should not be used for
purposes other than insurance rating” (O’Connell, 1998). The ISO FSRS largely concentrates on reactionary fire suppression capabilities and until recently has largely dismissed fire protection efforts. In addition, emphasis is placed on the number and type of resources, rather than community fire loss statistics, which practically represent the efficacy of the fire departments actual statistics, which practically represent the efficacy of the fire departments actual, provided fire protection.

CFAI Accreditation Model

The CFAI accreditation model utilizes a comprehensive self-assessment process “to examine past, current, and future service levels and internal performance and compare them to industry best practices” (“About Accreditation & CFAI”, 2013). Unlike other performance evaluation tools, the CFAI accreditation model was designed exclusively for the fire service. The goal of the CFAI accreditation model is to:

- Determine community risk and safety needs and develop community-specific Standards of Cover.
- Evaluate the performance of the department.
- Establish a method for achieving continuous organizational improvement (About Accreditation & CFAI”, 2013).

A major component of the self-assessment process is the development of a strategic plan and standard of response coverage document (Eastman & Jones, 2010). Standard of Coverage is defined as “a rational and systematic way of looking at the basic service provided by an emergency services agency” (Keenan, n.d.). After the completion of the self-assessment process, completed documentation is presented for peer review. Once approved, an on-site peer
evaluation is conducted after which the applying agency is either granted or denied accreditation (CFAI Accreditation Process, 2013).

**Advantages**

The accreditation process defines the department’s strengths and weaknesses and prioritizes areas of needed improvement utilizing factual data (Eastman & Jones, 2010). “Accreditation provides the analysis of risks within the community and how well the department addresses these risks” (Eastman & Jones, 2010). This data can be presented to citizens and elected officials to build support for funding (Eastman & Jones, 2010). The accreditation process requires open lines of communication with elected officials which can build trust due to the transparent nature of the process.

The strategic planning component of the evaluation can include external stakeholders such as citizen and business groups as well as elected officials. Not only does this process create buy-in from involved stakeholders, but the ability to educate citizens and businesses on fire department strengths and needs can influence elected officials to address the needs of the department. Collaborating with external stakeholders can also give internal stakeholders additional perspective on their influence to the community beyond their daily experience.

**Disadvantages**

The accreditation process is time and labor-intensive. According to William Purcell, the Charlottesville, Virginia Fire Department spent 600 staff hours completing the accreditation
process (Purcell, 2005). It may be difficult for a department to justify increased overtime costs in the midsts of budget cuts.

The self-assessment process opens every facet of the organization to external scrutiny. It is often difficult for fire service leaders to be advised of the deficiencies in their organization, even though the criticism is quite constructive and intended as a tool to assist in bettering the department. There is a nominal cost associated with the accreditation process. For a community with 10,000-49,999 residents, the fee is $5950. Additionally, “it is recommended that agencies budget approximately $6,000 for the on-site visit and $1,100 - $1,500 for the team leader's travel to the commission meeting” (“CFAI Accreditation Cost, 2016).

**SWOT Analysis**

The SWOT analysis examines internal factors (strengths and weaknesses), as well as external factors (opportunities and threats) and serves as the basis for defining needs and existing attributes which can be utilized to help meet those needs. “A SWOT analysis should provide a realistic understanding of the organization in relation to its internal and external environments” (Kinicki & Williams, 2013). In order to successfully conduct a meaningful SWOT analysis, methods must be chosen which elicit the most candid, usable information.

In order to obtain an accurate depiction of internal and external environments, the information gathering process must involve both internal and external stakeholders. Methods must be catered to best suit the individual or group from which the information is being requested. These methods include interviews, questionnaires, focus groups and surveys
Advantages

External stakeholders such as community and business leaders should be invited to participate in fire department improvement focus groups. Their participation will allow the department to view the organization from the eyes of the customer. This will provide insight into what the public perceives the fire department is doing well, and where it needs to improve. Little formal training is needed to conduct a SWOT analysis outside of knowledge of the department and the process being conducted.

Disadvantages

“SWOT data collection and analysis entail a subjective process that reflects the bias of the individuals who collect the data and participate in the brainstorming session” (Nordemeyer, n.d.). The SWOT analysis can be time consuming for fire departments and require manpower to execute. Time must be allowed to assemble focus groups, present the questions, and to harvest the elicited information.

Selecting a Method

The current state of rebuilding of the Sycamore Township Fire Department requires that the performance measure provide a comprehensive evaluation of all areas of the fire department. The STFD has had three fire chiefs in the past four years. Each chief has employed his own vision which has included everything from new standard operating procedures to new response and staffing guidelines. This has resulted in a fragmented organizational framework which is left to interpretation by each individual unit day officer.
The CFAI accreditation process is the most comprehensive performance measure of those evaluated. This process “provides an effective overall analysis of the department’s functions, policies, and rules” (Purcell, 2005). In addition to analyzing all areas of the organization, the process allows for community-driven strategic planning. Community-driven strategic planning “maintains a focus on the needs and expectations, both spoken and unspoken, of customers, both present and future, in the creation and/or improvement of the product or service provided” (“Fort Lauderdale Strategic Plan”, 2014). This collaboration with community representatives as well as elected officials is crucial to the rebuilding process due to past events which fostered mistrust between the fire department and elected officials. These past conflicts played out in the media and resulted in conflicting messages being sent by fire department representatives and elected officials. Involving community representatives and elected officials in a transparent evaluation of fire department and community needs, creates buy-in and allows all involved parties to become champions for the fire department’s sustained success.

The self-assessment format of the accreditation evaluation provides the necessary framework to guide the fire department through the evaluation and strategic planning process. Fire department members are asked to participate in the strategic planning process which “provides the membership with an opportunity to participate in the development of their organization’s long-term direction and focus” (“Fort Lauderdale Strategic Plan”, 2014).

**Needed Resources to Perform Evaluation**

The CFAI accreditation process is a complex undertaking which requires a thorough understanding of the process in order to be successful. The Accreditation process requires the
appointment of an accreditation manager. “The accreditation manager (AM) will spend many hours on the project making sure the process in on track and goals are being met” (Purcell, 2005). Once chosen, the accreditation manager should become the local expert on the accreditation process (Purcell, 2005). The CFAI offers numerous workshops to assist departments pursuing accreditation. In addition to classes on the process, it would benefit members involved to attend technical writing courses as well as courses on computer programs such as Microsoft Excel to assist with the recording of data required by CFAI. Understanding the process, and possessing the ability to gather and communicate required data can increase the likelihood of the projects success.

In order to complete the self-assessment, it is necessary to have access to all departmental records. “Data compiled from departmental reports and records are necessary to complete this process”, (Purcell, 2005). Resources must be made available for printing and copying documents. Venues must be reserved to accommodate external stakeholder meetings. Meals should be provided to participants as well as all stationary and writing instruments.

**Required Tasks and Time Required**

Due to the complex requirements, “The entire self-assessment process can take from one to three years of dedicated work”, (Wolf, 2015). According to O’Connell, a survey of 12 fire departments who underwent the accreditation evaluation spent from seven to thirteen months from the initial training to the final site visit with the average time being 9.55 months. (2002). The average time necessary to complete the self-assessment was five to ten months with 7.44
months being the average (O’Connell, 2002). The average amount of total man hours spent on the project was 1945 with the average individual commitment being 412 hours.

The first step in the accreditation process requires that the organization become a registered agency with CFAI. This allows the agency to obtain a copy of the self-assessment handbook. Required documents and data must be collected. A team of dedicated employees must be selected to form the Performance Measurement Team. At this time the fire chief and chosen accreditation manager should attend the CFAI basic workshop training.

Once it has been determined by the organization that it is ready to commit to the accreditation process, the CFAI program manager must be notified of the agency’s intention to pursue accreditation. This is accomplished by filing the Applicant Agency Status Form (CFAI Accreditation Process, 2013). At this point, the agency receives an Applicant Agency packet, which contains the materials required to move forward. The agency is assigned a mentor who is available to the agency to review draft documents and to offer feedback and advice. An agency is allowed 18 months in the Applicant Agency status to complete the self-assessment process. This includes the community risk analysis, standards of cover, and strategic plan.

The purpose of the community risk assessment is to allow the community to “understand its risks and estimate capability requirements”, (FEMA, 2015). This analysis allows the agency to evaluate risk factors which exist in the community in order to develop a better understanding of the issues it faces and what needs exist (Purcell, 2005). The risk assessment requires the fire department to gather data for fire risk regarding:

- Population
• Number of high risk structures
• Types of fires the department has responded to
• Critical infrastructure
• Heavy industry
• Areas of risk with potential for significant economic impact
• Buildings having significant historical or cultural value (Tacoma Standards of Cover, 2009).

The data required for the EMS risk assessment includes:

• Population
• Percentage of population over 50
• High frequency incidents
• Consistent and emerging trends (Tacoma Standards of Cover, 2009).

CFAI defines the Standards of Response Coverage as “adopted, written policies and procedures that determines the distribution, concentration and reliability of fixed and mobile response forces for fire, emergency medical services, hazardous materials and other forces of technical response” (2015). This requires the fire department to gather data regarding:

• Station locations
• Fire apparatus type and capability of fire apparatus
• Fire and EMS response guidelines
• Special operations resources and response guidelines
In order to effectively formulate a strategic plan for the future, internal and external factors must be analyzed to identify positive and less desirable attributes. A SWOT analysis examines strengths, weaknesses, opportunities and threats and serves as the basis for defining needs and existing attributes which can be utilized to help meet those needs. A primary component of community-driven community planning is external stakeholder focus groups. These focus groups provide valuable insight into what the community expects from the fire department. “Community-Driven Strategic Planning creates a platform for a wide range of beginnings. The approach comes to life by being shared, debated, and implemented in the context of organizational realities” (Santa Clara Fire Department Strategic Plan, 2014).

Information gathered in the SWOT analysis is utilized to formulate a strategic plan. The strategic plan is a document which lays out a path that allows the organization to progress from the current state, towards the stated vision. The budget, is crucial to the strategic plan because it provides the resources to implement the strategic plan. The strategic plan is essential to the accreditation process because “good planning usually indicates local leaders are interested in the direction the department is taking and that there is a design for growth and improvement” (Purcell, 2005).

Once the self-assessment has been completed, the agency must submit a written document. This document “chronicles its programs, plans, and goals based on its self-assessment” (Purcell, 2005). This document can be as many as 400 pages in length. CFAI provides a template for this document to assist in its completion (Purcell, 2005). This document is submitted to CPSE for peer review (CFAI Accreditation Process, 2013).
Once the agency’s peer evaluation is approved, the assigned peer assessor team leader contacts the agency’s accreditation manager to arrange the on-site assessment. This visit may take three or four days (Purcell, 2005). After the conclusion of the on-site visit, all information is gathered and presented to the Accreditation Committee by the peer assessment team leader. The agency representative is present for the presentation (CFAI Accreditation Process, 2013). At this point, the commission either grants, denies or defers accreditation.

**Stakeholders**

A Stakeholder is defined as “A person, group or organization that has interest or concern in an organization” (“What is a Stakeholder?” n.d.). Fire department stakeholders can be categorized as internal or external. In order to obtain a well-rounded assessment of the fire department and the environment, both internal and external, a cross-section of stakeholders must first be identified. Internal stakeholders include:

- Fire Chief
- Fire Officers
- Firefighters
- Elected Officials (Township Trustees, Fiscal Officer)
- Township Administrator

External stakeholders include:

- Residents
• Individuals who work in the township
• Business Owners
• Community Groups

“In order to dedicate time, energy, and resources on services most desired by its community, the organization needs to understand what the customers consider to be their priorities” (Santa Clara Fire Department Strategic Plan, 2014). Diversity in stakeholder selection will elicit more well-rounded data for consideration, resulting in a more meaningful evaluation process.

**On-going Tasks**

In order to sustain gains achieved through the performance evaluation process, it is necessary to identify on-going tasks and information which must be collected to ensure that the benefits of future evaluations are maximized. The comprehensive collection of data is crucial to the evaluation process. Data extracted from departmental records form the basis from which benchmarks are established. These benchmarks serve as a barometer to gauge the efficacy of implemented changes.

Call times for all details from the time the call is received by the communications center until the unit is back in quarters must be recorded for every call. Distance traveled should be tracked. This data can be utilized to identify delays in service delivery so that improvements can be made. Nature of alarms, type of occupancy or property use, as well as situations found must be recorded. A comprehensive database of fire loss data must be maintained. This information can be utilized to identify hazard areas or trends which may suggest the need for improved prevention efforts. Community information such as population and demographic data
should be updated annually if possible. This data could be utilized to identify changes in the service needs of the community.

The inspection division should work to identify and record hazards in the community. Buildings identified as low or non-fire hazard risks should categorized for future analysis. Buildings should be categorized in terms of fire risk and type of use. The use of automatic fire protection systems should be identified and recorded. Fire risk assessments of new occupancies can be utilized to determine if the fire risk outweighs the suppression capabilities of the fire department. If so, additional fire suppression systems may be required.

Monthly meetings should be conducted to keep the fire chief updated on the progress of states initiatives. The Standard of cover and strategic plan should be evaluated annually. The plans should be modified to address any identified deficiencies. Community focus groups should be reconvened periodically to gauge the efficacy of fire department initiatives and stated goals.

**Improvement Plan**

After reviewing the core service delivery and conducting a SWOT analysis of the Sycamore Township Fire Department, the internal stakeholders have identified critical issues and service gaps. In order to progress towards a vision, the fire department must address those weaknesses which may hinder efforts to meet the stated goals. Identifying these goals not only serve as the foundation for the improvement plan, but also improves the current performance of the organization. For the purpose of this paper, six critical areas of improvement were identified:

- Strength in leadership
• Succession Planning
• Lack of S.O.P.’s/S.O.G.’s
• Lack of consistent discipline
• Insufficient budget and staffing to support the needs of a rapidly growing community
• Apparatus replacement schedule

Sycamore Township Fire Department

Improvement Plan

Objective 1. Improve leadership skills of current fire officers.

Timeframe- 6 -12 months

Critical Tasks- Evaluate deficiencies in current leadership

Evaluate available officer development courses and associated costs

Establish leadership retreat program

Implement program

Establish ongoing re-evaluation program
Objective 2. Develop succession plan for fire officers

Timeframe- 2 years

Critical Tasks- Evaluate existing officer development programs

- Identify requisite competencies
- Establish eligibility criteria
- Develop mentor program
- Implement Program
- Establish ongoing re-evaluation program

Objective 3. Develop comprehensive standard operating procedures and guidelines

Timeframe- 12-18 months

Critical Tasks- Identify working group for analysis and revisions

- Evaluate existing S.O.P/S.O.G.’s
- Present Draft at 12 month benchmark
- Present final draft at 15 month benchmark
Develop and conduct training on new S.O.P./S.O.G’s

Implement Program

Establish ongoing re-evaluation program

**Objective 4.** Improve uniform administration of disciplinary procedures

**Timeframe** - 3 months

**Critical Tasks** - Evaluate disciplinary procedures

Review disciplinary procedures with officers

Establish ongoing re-evaluation program

**Objective 5.** Increase budget to hire additional career personnel

**Timeline** - 3 years

**Critical Tasks** - Conduct needs analysis of current staffing
Conduct cost analysis of adding additional career personnel

Develop tentative budget including additional personnel

Collaborate with elected officials to compose feasibility plan

Present formal proposal to board of trustees

Objective 6. Develop formal apparatus replacement schedule

Timeline- 6 months

Critical Tasks- Evaluate NFPA fire apparatus replacement guidelines

Establish apparatus replacement rotation model

Evaluate maintenance vs. replacement cost

Establish reserve apparatus replacement model

Evaluate budgetary impact

Evaluate fire apparatus funding options

Implement Program

Establish ongoing re-evaluation program
Conclusion

In order to efficiently and effectively plan for a successful future, an organization must analyze the current and predicted environments. Performance measures exist to assist organizations identify strengths and weaknesses in order to not only improve current performance, but to improve the probability of reaching stated goals and objectives. It is integral to the evaluation process that the most applicable performance measure is chosen. The performance evaluation process will guide an organization towards a goal with maximum efficiency as well as enhance the organizations strategic plan.
References


