



**ORGANIZATION ASSESSMENT  
AND STRATEGY  
RECOMMENDATION PLAN**

**LOWER SWATARA  
VOLUNTEER FIRE DEPARTMENT**

DAUPHIN COUNTY, PA

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PREPARED BY  
**ROBB CONSULTING, LLC**  
MARCH 2022

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# EXECUTIVE SUMMARY

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## PURPOSE

**“How do we help our volunteers manage and fund our volunteer fire company?”** Finding the answer to that question, asked at the beginning of this assessment, was the core goal of this assessment by ROBB Consulting, LLC (ROBB). Working with the officers and members of the Lower Swatara Volunteer Fire Department and Lower Swatara Township officials, we assessed the existing fire-rescue system to identify and propose strategic administrative and operational objectives that would be adopted by the fire department and the township for the continued success of the volunteer fire-rescue system, its members, the community, and the township and to foster a better working relationship among all parties.

## HOW DID WE DETERMINE YOUR NEEDS?

Through a series of first-person and small group interviews, as well as a review of existing data and practices, ROBB, in partnership with SGS Architects Engineers, Inc., determined short-term and long-term courses of action that will continue to advance the Lower Swatara Volunteer Fire Department as a successful volunteer fire and emergency services provider. The objectives and recommended outcomes within this plan will also position Lower Swatara Township to better support its volunteer fire and emergency services in an ever-changing world.

## OUR GOALS FOR YOU TO GROW

As a result of the evaluation, six strategic objectives have been identified that ROBB envisions will strengthen the Lower Swatara Volunteer Fire Department over the next three to five years.

- **Address the need for adequate funding to sustain the volunteer fire department now and into the foreseeable future.** For nearly two decades, the message has been loud and clear. Pennsylvania’s Fire and EMS system is struggling. It lacks adequate funding and is losing active volunteers daily. Throwing money at the problem will not fix it. However, adequate funding to support clear goals and objectives will make a significant impact. It is in everyone’s best interest to do so.
- **Increase the awareness of the volunteer fire service in the community, build trust, foster more open communication among the fire department, township, and community, and advance plan objectives** by establishing a Community Fire-Rescue Advisory Board. The fire-rescue system in Lower Swatara Township is largely managed and run by the volunteer fire department with little local government involvement. The creation of this Board will bring all community elements together to create a stronger, more resilient fire-rescue system.

- **Proper and thoughtful planning benefits every type of organization**, whether non-profit, government, or for-profit. Continued administrative enhancements and the creation of a fire department strategic planning team will help guide the organization with implementing objectives in this plan and can function as the group that works with others to update this plan in the future.
- In today's busy world with too many commitments, it is important to have a volunteer fire department where the members can focus on training, answer calls for service, and pursue opportunities to continuously self-improve to better serve the community. Creating a membership team to **develop new and existing members and provide some type of thank you** to dedicated, active members will help maintain the volunteer membership.
- As costs continue to rise and membership decreases, apparatus fleets should be rightsized and reflect the risk in the community. The current fleet of apparatus owned and operated by the company is sufficient for today's needs. **Adopting the proposed replacement schedule** will permit the fire department to plan accordingly for grants, investments, and fundraising to purchase and maintain apparatus into the foreseeable future.
- As one member stated in the large group discussion, "We don't need a ladder truck." It was a memorable statement. Working with neighboring fire-rescue organizations and their brother and sister firefighters will provide long-term rewards. **Many opportunities with neighbors exist** and need to be discussed and implemented. Everyone, especially those who help pay for these valuable public services, will benefit with the economies of scale that can be realized by working together.

### OUTCOME

This assessment and the strategic objectives outline the best course of action for the continued success of the Lower Swatara Volunteer Fire Department and Lower Swatara Township and provide a foundation to move forward. By implementing the goals identified in this evaluation, a stronger, more resilient all-volunteer fire department can be maintained for the next three to five years. This plan relies on the relationships that exist today and builds upon them by strengthening the existing ones and creating new relationships among the fire department, the township, and the community. This will allow the fire department and township to adapt quickly to the outside forces that have created the downturn in the ranks of volunteer Fire and EMS providers since the 1970s, along with new challenges faced today and in the future.

# BACKGROUND

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The Lower Swatara Volunteer Fire Department was envisioned in the minds of several residents and business owners in 1956. Over the years, as the township population was starting to grow, and development was accelerating quickly, the fire department began to expand operations to include vehicle extrication, technical rescue services, contain and control hazardous materials spills and releases, calls for emergency medical assistance, and many other emergency tasks.

Not only has the fire department grown in its services and membership, but the fire station facilities have also grown as well. Originally just a garage to house a fire engine, the fire department now occupies a state-of-the-art fire station built in 2005 on Fulling Mill Road that houses apparatus, administrative space, meeting and training space, storage and repair areas, dorm facilities, fundraising hall, and serves as an evacuation center for township residents and as a staging area for regional and state-wide public safety teams prior to deployment across the state, country, or the world when the need arises.

The Lower Swatara Volunteer Fire Department provides a full range of firefighting, rescue, and special operation services, including water rescue. The provision of fire and rescue services in Lower Swatara Township is delegated to the Lower Swatara Volunteer Fire Department by ordinance. The company does not provide transport 911 Emergency Medical Services. Those services are provided by a contracted, independent agency known as Life Lion Emergency Medical Services.

The first due service area encompasses a geographic area of approximately 14.6 square miles in Dauphin County, Pennsylvania. According to the United States Census website, the 2020 estimated total population served is 9,531 with daily employment swelling the population estimate to approximately 58,000 people. The median household income based on 2019 dollars is approximately \$67,313.

The first due service area is home to several commercial and industrial amenities including:

- Penn State University Capital Campus
- FedEx Freight
- United Parcel Service (UPS) Regional Hub
- Pennsylvania Air National Guard

The first due service area is also home to many significant transportation networks including:

- Harrisburg International Airport
- Pennsylvania Turnpike and its Headquarters
- Pennsylvania Route 283
- Amtrak Keystone Corridor

## BACKGROUND Continued

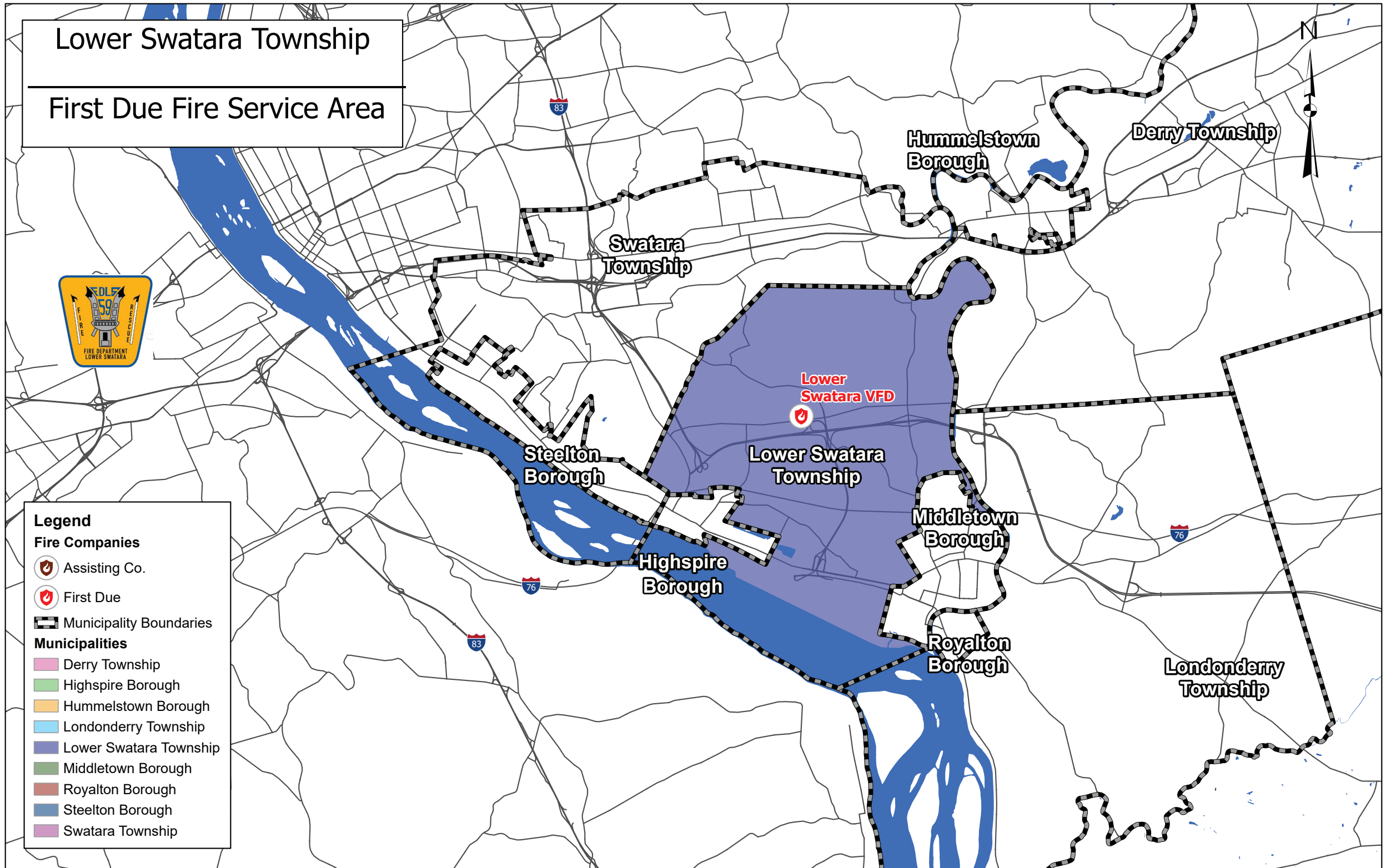
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- Norfolk Southern Railroad
- Middletown & Hummelstown Railroad
- Susquehanna River

Lower Swatara Township was once called the Township of Peshtank, which means, "place where water stands", and this is apt, as Lower Swatara Township is bordered by the Susquehanna River to the south and the Swatara Creek to the east. These navigable waters have helped the region thrive, both agriculturally and industrially.

The township sits just six miles to the south of the state capital of Harrisburg, where you can find large attractions like the National Civil War Museum, Senators Minor League Baseball team, State Capitol Building, and numerous restaurants, shops, and other businesses. The township's location in the state capital region and the popularity of all these elements contribute to the public safety needs of the township and its surrounding communities.

In recent years, the area has begun to reinvent itself, growing and evolving, particularly as the Penn State campus and businesses surrounding Harrisburg International Airport and the airport itself expand. With this growth, the community's residents, businesses, and visitors have come to expect a high-level of service from the fire department.



Map 1: First Due Service Area

# OBJECTIVE 1: REVIEW FIRE DEPARTMENT AND TOWNSHIP RELATIONSHIP

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## RECOMMENDED OUTCOMES

- **Address yearly operating and capital funding needs**
- **Review fire station ownership**
- **Transfer workers' compensation coverage**
- **Update service agreements**

During the assessment, several important concerns arose during the interviews with officers and members. The fire department is not immune to societal and demographic changes that are occurring today. Not only that, volunteer fire and EMS organizations are no longer “the only game in town.” Numerous other social organizations, travel sports, and even social media have replaced volunteering at the local fire house. Finding volunteers to train and fight fires is difficult. Finding volunteers to take on fundraising is even more difficult. Good or bad, no one volunteers for a fire department to be an accountant or a budget analyst. The ability to fund proper fire protection is critical to the success of the organization and the delivery of the service it provides to the community. ***The township needs to incrementally increase its annual funding to assist the company to accomplish its goals.*** The increased funding will help sustain the cost-effectiveness of the volunteer fire service for the foreseeable future until the need to arises to supplement the fire department’s volunteer firefighters with part-time and full-time paid employees.

The First-class Township Code provides for funding of fire protection primarily through either the general fund or a fire tax. Currently, the primary source of revenue for township fire funding is real estate taxes. In Pennsylvania, there are caps on the millage rate for the fire tax. The current cap, which is legislatively mandated, is currently three mills for fire protection. It is also important to note that one of the three mills for the fire funding is available for salaries and benefits; however, the township does not dedicate these funds for salaries and benefits at this time. The General Fund supports all township departments, with public safety departments typically representing the largest portion of funding within local governments. Currently, the fire tax in Lower Swatara Township is 0.049 mills and generated \$353,278 in 2021.

Another part of the current funding system is contributions to the fire department from the Pennsylvania Foreign Fire Insurance Tax. This tax passes through the township’s general fund to the volunteer company’s affiliated volunteer firefighter’s relief association. The Commonwealth of Pennsylvania levies this tax on out-of-state or “foreign” insurers and passes the proceeds to local



## OBJECTIVE 1: REVIEW FIRE DEPARTMENT AND TOWNSHIP RELATIONSHIP Continued

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municipalities. The local municipality is then required by law to pass the funds to the fire department's affiliated volunteer firefighter's relief association that serves its jurisdiction.

Additionally, the state statute provides for the management and audit of these funds and limits how a fire department may spend them. This funding source fluctuates year to year based on taxes collected. Due to a legislative change in the method of collecting and dispersing these funds, many relief associations have seen and are continuing to see decreased amounts of aid over the last several years. This trend will likely continue and therefore the township and fire department should develop plans for continued shortfalls.

The purchase, repair, and replacement of capital assets is not inexpensive. The fire department and township should **review the current fire station ownership arrangement**. The existing station was built in 2008 and is currently beginning to see the need for more extensive repairs and replacement of major building elements. A reserve funding study of the exterior elements, exterior building elements, interior building elements, and building systems, along with firefighting equipment and apparatus, was conducted in cooperation with SGS Architects and Engineers, Inc.

The funding goal of a reserve study is to maintain reserves above an adequate, but not excessive, threshold during one or more years of significant expenditures. The "cash flow method" was used to compute the reserve funding plan. This method offsets future variable expenditures with existing and future stable reserve funding.

The application of this method also considers:

- current and future cost of replacement
- 0% annual rate of return on invested reserves
- 3.5% inflation rate for estimating future replacement costs
- replacement will be "of same" as current item

The reserve study considers building replacement costs over the next 11 years. The study recommends an average yearly reserve for building and grounds to have sufficient funds on hand for year 2027. In that year, many major components are scheduled for replacement. The building and grounds reserve amount starts with \$166,000 for 2022. This dollar amount creates sufficient reserve to cover the scheduled repairs in 2027 and then the fund will begin to build up again. In order to have a more thorough budget picture, we have included reserve amounts for fire apparatus purchases, firefighting

## OBJECTIVE 1: REVIEW FIRE DEPARTMENT AND TOWNSHIP RELATIONSHIP Continued

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equipment, personal protective equipment for firefighting purposes, and vehicle maintenance. ***It is also recommended that maintenance contracts are negotiated and signed for the major building systems including HVAC, plumbing, electrical, and fire protection (sprinkler system). Also, the reserve study should be updated annually.***

Another point of concern that needs to be addressed is how the current workers' compensation system is managed day-to-day. The volunteer fire and emergency services depend on the commitment of a person's time and skills to be successful. The fire and emergency services system can be a dangerous profession. Unfortunately, from time to time, a member is injured or disabled in the performance of his or her duties. Workers' compensation is a system of insurance to provide supplemental income in case this individual is unable to work to provide a means of income.

Currently the fire department manages the workers' compensation insurance program. The insurance coverage is sought out, paid for, and administered by the fire department. The township then provides financial assistance to pay for the coverage. This places a high burden on the officers of the fire department who do not have the education, training, experience, nor time to administer such a program. As such, the ***workers' compensation insurance coverage and management should be transferred to the township.***

Although the existing arrangement has worked in the past, it is difficult to understand why any volunteer fire department officer without the proper knowledge and expertise would want the burden of managing a program that may become the sole source of income for a member in the event of a tragic incident. The recordkeeping and other needed paperwork should not be left to a volunteer who is not an expert in insurance or human resources. Improper handling could cause an undue burden on the injured member. The township, with full-time staff and retained legal counsel, and which is statutorily required to provide coverage, is in a much better position to handle this administrative function.

In Pennsylvania, the authority having jurisdiction (AHJ) for the provision of the delivery of Fire and EMS is local government. This requirement is statutorily required in the First-Class Township Code and is commonly referred to as Act 9 of 2008. This provision in the local government codes, however, does not state what entity will provide the service nor to what level of service will be provided. It only says it must be provided. The Lower Swatara Volunteer Fire Department has been the designated fire-rescue provider to the township since its inception in 1956. ***Any existing service agreements should be reviewed and updated.*** The township should also review and amend any pertinent local government codes.

# OBJECTIVE 1: REVIEW FIRE DEPARTMENT AND TOWNSHIP RELATIONSHIP Continued

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In many jurisdictions, the foundation for the expectation of the volunteer fire company or ambulance service as service providers are the agreements with the local government that govern the obligations of each party. For more and more volunteer fire departments, their funding is tax revenue either generated by, or funneled through, the local government. Any existing service agreements should be reviewed regularly to ensure all parties are fulfilling their obligations and that the agreement is still representative of the current relationship. Typically, these agreements, whether called a Service Agreement, Memorandum of Understanding, or other such name, contain many key points, but most include at minimum the following:

- Recognition as the Fire and/or EMS provider
- Outline of required periodic meetings between the parties
- Local government funding allotment with designated annual increases
- Permitted uses of the local government funding
- Annual reporting requirements, sometimes at local government's expense
- Proof of insurance coverage

This type of agreement clearly defines the roles and responsibilities of all parties and provides the answers to important questions when the volunteers and elected or appointed officials change over time.

## SUPPORTING DOCUMENTS

**Chart – Yearly Required Funding by Category**

	Year 2022	Year 2027	Year 2032
Buildings and Grounds	\$166,000	\$197,156	\$234,159
Firefighting Equipment	\$23,676	\$286,733	\$33,375
Mortgage	\$81,000	\$81,000	\$81,000
Apparatus Replacement	\$111,500	\$132,427	\$157,282
Apparatus Maintenance	\$20,855	\$24,764	\$29,399
General Operating Expenses	\$240,000	\$285,044	\$338,541
<b>Total Yearly Budget</b>	<b>\$643,031</b>	<b>\$1,007,165</b>	<b>\$873,756</b>
<b>Less Township Allocation</b>	<b>\$357,870</b>	<b>\$381,742</b>	<b>\$407,206</b>
<b>Net Funding Shortage</b>	<b>-\$285,161</b>	<b>-\$625,423</b>	<b>-\$466,550</b>

# OBJECTIVE 1: REVIEW FIRE DEPARTMENT AND TOWNSHIP RELATIONSHIP Continued

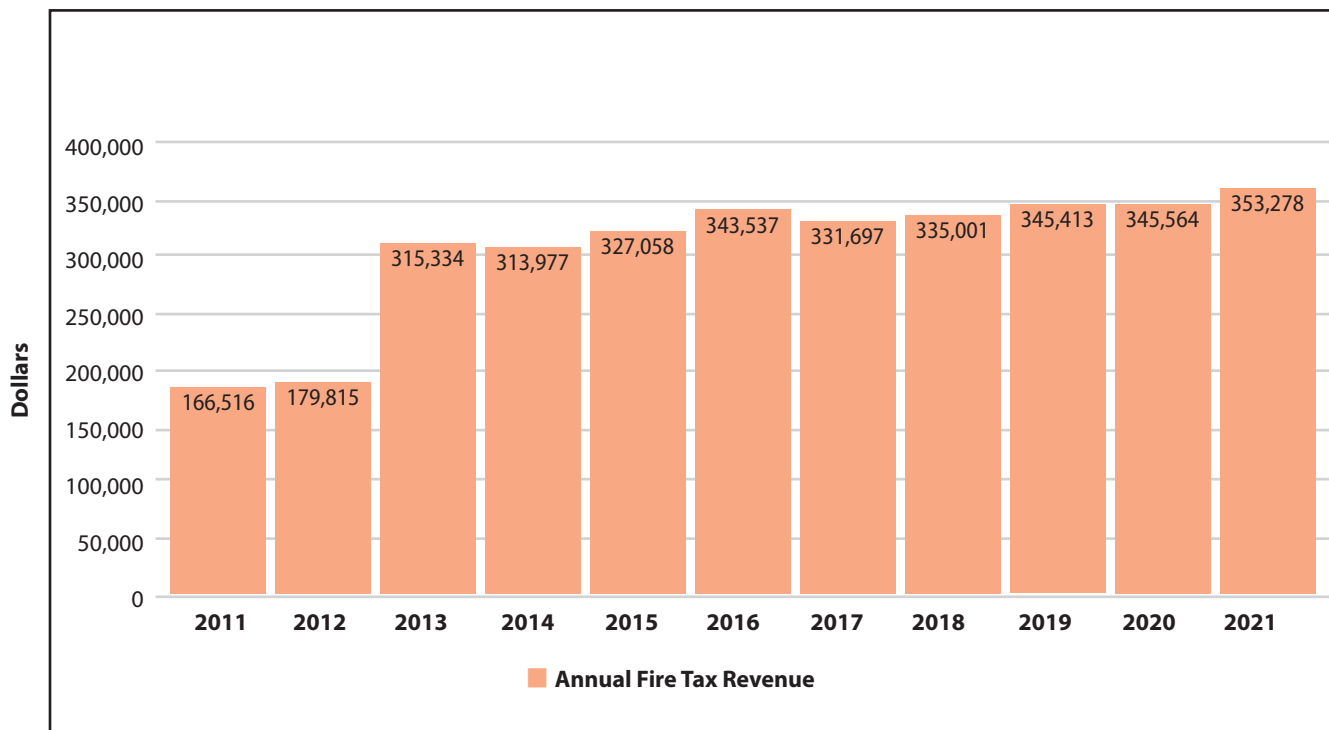
## Chart – Combined Yearly Budget All Categories

Building and Grounds\* + Firefighting Equipment + Mortgage + Apparatus Replacement + Apparatus Maintenance + General Operating Expenses

Year 2022	Year 2027	Year 2032
\$643,031	\$1,007,165	\$873,756

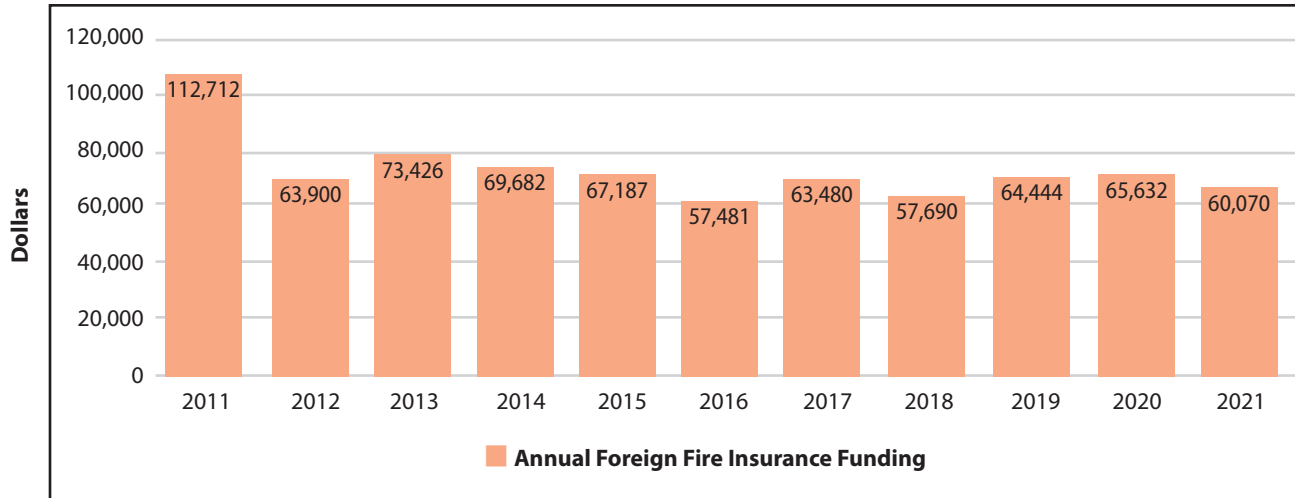
\*Historical data indicates building construction inflation of 3.5% per year over the past 10 years.

## Chart – Annual Township Fire Tax Revenue



# OBJECTIVE 1: REVIEW FIRE DEPARTMENT AND TOWNSHIP RELATIONSHIP Continued

**Chart – Annual Foreign Fire Insurance Funding**



Year 2011	Year 2021	Percentage Change
\$112,712	\$60,070	-46%

**Task Assignment:** The objective should be put into action by the fire department president and treasurer in conjunction with the township’s fire department liaisons.

**DATE FOR IMPLEMENTATION**  
**March 1, 2022 – December 31, 2023**

## OBJECTIVE 2: ESTABLISH COMMUNITY FIRE-RESCUE ADVISORY BOARD

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### RECOMMENDED OUTCOMES

- **Increase communication among the fire department, local government, and the community**
- **Assist with advancing objectives of the assessment**
- **Membership shall include a diverse mix of fire department members, community and business members, and local government officials**
- **Shall meet quarterly and report to both the fire department and township**

The fire department, working with the township, should **establish a community Fire-Rescue Advisory Board**. What is an advisory board or advisory committee? It is a type of board or committee consisting of representatives of the public who meet on a regular basis with representatives of the fire-rescue service and local government. Its purpose is to build and foster partnerships among those who provide the service and those who rely every day on the services of the fire department for a safe community.

There are two primary goals for the community fire-rescue advisory board. The first goal is to **increase communication and to build better relationships**. During the interview process, it was evident that engaging the community to educate them on the challenges of the volunteer fire and emergency services was a top priority for the officers and members of the company. As in most places, there is an assumption that people understand how public safety is delivered and how local government works. Unfortunately, this is not necessarily true. Most interviewees reported that the community has no idea what they do day-to-day and how much work it takes to run a successful volunteer organization. Most importantly, many community members have no idea the people answering their call for help are volunteers.

The second goal of the advisory board is to provide broad-based input into the planning and decision-making process to **assist with advancing the objectives of this assessment**. This group can evaluate the broad range of stakeholder interests that are affected by a specific objective presented in the plan and allows for the in-depth and focused involvement and input from all stakeholders. As communities change and the emergency service needs evolve, funding needs typically change as well. Costs will continue to rise. This group can also be the information and educational resource for the development of consensus when and where it is needed for these complex issues that affect the broader community.

## OBJECTIVE 2: ESTABLISH COMMUNITY FIRE-RESCUE ADVISORY BOARD Continued

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The membership of the ***advisory board should consist of seven (7) members with a broad range of experience***. This small group size allows for greater accountability and flexibility, both in terms of ideas and scheduling. They can build greater trust among the members and much more ownership. Smaller groups also tend to outperform larger teams.

As with any working group, having the correct mix of participants is very important along with the correct number. A good mix of fire department members is important. You not only need a perspective for today, but you also need a historical perspective. A life member with decades of service is invaluable. Knowing where you came from helps you get to where you need to be in the future. Let us not forget the community is who the fire department serves. Making sure the residents and businesses are represented is very important. Lower Swatara Township is a very diverse community with many high-profile commercial, educational, and transportation uses. Possible sources for candidates for the advisory board may come from Harrisburg International Airport, Middletown Area School District, and Penn State University, Capital Campus.

Once appointed, the advisory board members shall pick a chairperson, vice chairperson, and secretary from within its membership. The Board shall be considered ad hoc in nature and shall exist to support the business and operational needs of the fire and emergency services and report back to the company and township on a regular schedule. This objective can be coordinated by the company's Vice President.

## OBJECTIVE 2: ESTABLISH COMMUNITY FIRE-RESCUE ADVISORY BOARD Continued

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### SUPPORTING DOCUMENTS

#### Sample Community Advisory Board Membership

Members	Number
Fire Department (Active Member)	1
Fire Department (Life Member)	1
Fire Department (Executive Board Member)	1
Citizen Representative	1
Business Representative (Private Sector)	1
Business Representative (Public Sector)	1
Student Representative (High School)	1
<b>Total</b>	<b>7</b>
Non-voting: Fire Chief	1
Non-voting: EMA Representative	1
Township Representative	1

**Task Assignment:** The objective should be put into action by the fire department president, in conjunction with the township fire department liaisons. The Community Fire-Rescue Advisory Board will report back to the company and township on a regular schedule.

**DATE FOR IMPLEMENTATION**  
**March 1 – December 31, 2022**



## OBJECTIVE 3: ENHANCE COMPANY-LEVEL ADMINISTRATIVE FUNCTIONS

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### RECOMMENDED OUTCOMES

- **Continue monthly workshop meeting**
- **Establish company-level Strategic Planning Team**
- **Immediate goal of revising company officer and committee structures, bylaws, and tracking of administrative hours**

The current administrative officers work diligently to make the best administrative and financial decisions based on generally accepted business and accounting practices. The recent implementation of a **monthly workshop meeting should be continued**. This was implemented by the current fire department president while this assessment was being developed. Its purpose is for the officers of the company to meet to review and prepare for the business that will be acted upon at the upcoming fire department and relief association meetings. This preparation allows for a more organized meeting, better decisions, and allows for better time management.

In support of the long-term needs of the company, a Strategic Planning Team should be established. This team would be responsible to plan for the administrative and operations needs of the company and provide long-term guidance for the company. The core areas identified include the following:

- Advance objectives of this strategy recommendation plan
- Manage the budget and investment planning
- Manage capital assets
- Revise officer and committee structure as needed
- Develop officer transition process
- Review administrative and operational guidelines
- Monitor administrative staff needs

At times it is easy to forget about the administrative or “business” side of an organization. This can especially happen in a fire and emergency service organization due to the nature of its mission. Firefighters and other providers are focused on training and response. However, the administrative side provides for the governance and day-to-day business functions. A strong day-to-day business plan with proper execution is paramount for any successful organization to accomplish its mission. The team should strive to consist of members with diverse business experience and institutional knowledge of fire and emergency services, non-profit organizations, and local government. By creating a team of people with diverse backgrounds, they will be positioned to advance the strategic

## OBJECTIVE 3: ENHANCE COMPANY-LEVEL ADMINISTRATIVE FUNCTIONS Continued

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needs of the company on both the administrative and operations side of the organization. The team should also review, collect feedback, and approve the administrative and operational guidelines of the company.

Today, everyone is busy. The focus of today's volunteer firefighter and emergency responder is to attend training and respond to calls. Like it or not, "business side" volunteers are hard to find today. The administrative workload to keep any organization running smoothly is time consuming and continues to increase. Monitoring the amount of time each officer of the company dedicates to running the organization in addition to training and answering calls for service is paramount. Burnout is a mounting problem. Managing people must become a priority. By monitoring the hours volunteered and discussing options to reduce the volunteer's workload, the company may determine the need for some type of paid administrative help, such as a part-time business manager. An investment in part-time administrative support will reduce volunteer administrative hours and allow members to focus on training and emergency response.

### SUPPORTING DOCUMENTS

#### Chart – Sample Strategic Planning Team

Members	Number
President	1
Treasurer	1
Senior Trustee	1
Operations Officer	1
Member-at-Large	1
<b>Total</b>	<b>5</b>

**Task Assignment:** The objective should be put into action by the fire department president. Once implemented, the Strategic Planning Team will report back to the officers at the workshop meeting and membership on a monthly basis.

**DATE FOR IMPLEMENTATION**  
**March 1 – December 31, 2022**

## OBJECTIVE 4: ENHANCE COMPANY-LEVEL MEMBERSHIP

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### RECOMMENDED OUTCOMES

- **Establish company-level Membership Team**
- **Adopt Act 174 Tax Credit Program**
- **Develop member and officer expectations**
- **Develop a Member Benefit Program**
- **Continually monitor firefighter participation numbers**

The mission of an emergency service organization is to provide rapid response to emergency calls for service with highly trained, equipped, and competent personnel to respond to calls for service 365 days a year. In an all-volunteer system, having enough members to fulfill its mission is the highest priority and the biggest challenge today. **A company-level Membership Team** should be established to recruit and on-board new members, retain current members, and develop the future administrative and operational leaders of the company.

Since the 1970s, the number of active volunteer responders in Pennsylvania has gone from approximately 300,000 to what is reported today in Senate Resolution 6 at approximately 38,000. An all-volunteer emergency system exists only because of the dedicated members of the community who willingly donate a significant portion of their time and talent. The township should **adopt the Act 174 Tax Credit Program**. There are two reasons to adopt this program. First, to retain existing volunteer members who are residents of the township. The second reason is to provide an incentive to township residents who may consider joining the fire department to serve in some capacity.

During interviews, members reiterated the on-going challenge of on-boarding and retaining new members. It can be difficult to express what is expected from an individual who has no connection to the emergency services, especially the volunteer system. A few members also shared that there is a strong need to educate newly elected or appointed officers on the duties and responsibilities to their new position. The Membership Team should **develop member and officer expectations**. What are the duties and responsibilities of each member of the team? This could take the form of stand-alone policies or a comprehensive handbook that includes the vision the fire department has for its members and officers, how a new member is successfully on-boarded, and how to best educate new officers to successfully fulfill their leadership roles.

## OBJECTIVE 4: ENHANCE COMPANY-LEVEL MEMBERSHIP

Continued

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There are many things that can be done to retain the dedicated volunteers we have today. Each organization must determine what it is that keeps their members coming back day to day. Everyone has a different reason to volunteer. Once it is determined what incentives are optimal, the company should **develop a Member Benefit Program** that would include Act 174. Whether it is gift cards, tickets to local sporting events, or a stipend program, a program is needed to say “thank you” for volunteering your time and talents. Members would qualify based on their yearly activity level and participation would be tracked in-house. The Member Benefit Program should also include guidelines for members who have passed to honor their contributions to the company.

As the desirability of the area for college students, retirees, and tourists continues to increase over the next one to two decades, the related increase in land redevelopment, business and population growth, vehicle traffic, flights, and passenger train counts will continue to increase the demand for service. This will directly impact the Lower Swatara Volunteer Fire Department. The operational officers should **continually monitor volunteer firefighter turnout per calls for service. Administrative officers should also monitor and track the amount of time contributed by members to administrative requirements that exist within the organization.**

Historical call data indicates an annual increase of calls for service by 15% since 2003. By monitoring the participation of volunteer responders yearly, the leadership of the company and township can identify trends that may impact the delivery of fire-rescue services. By recognizing a decrease in the number of active responders sooner than later, the company and township can begin discussions on the need for supplementing volunteer staffing with career firefighters.

### SUPPORTING DOCUMENTS

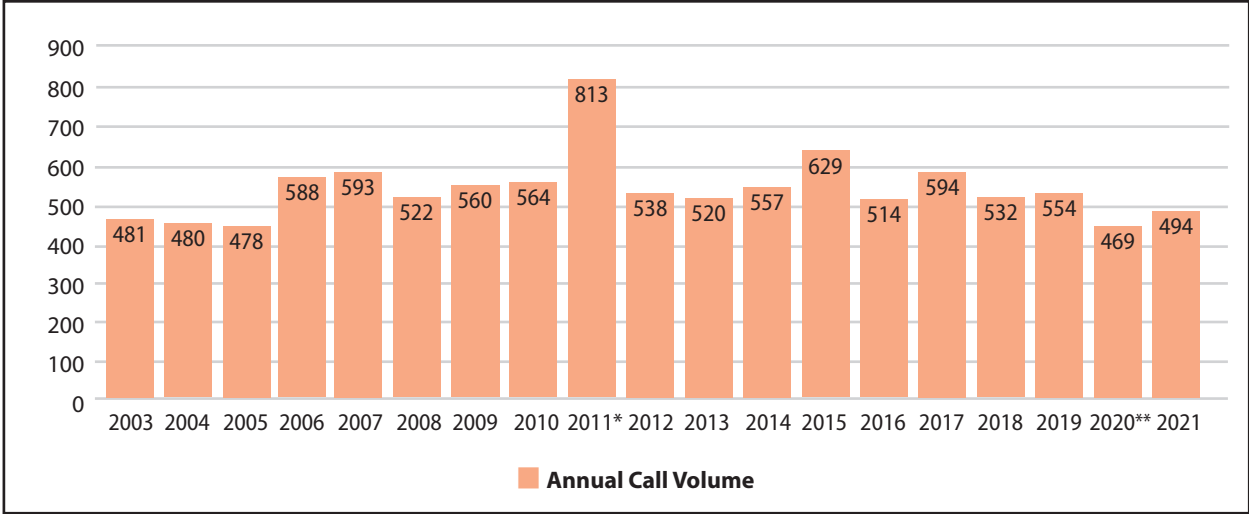
**Chart – Sample Membership Team**

Members	Number
Administrative Officer	1
Operations Officer	1
Active Member-at-Large	1
Junior Member-at-Large	1
Life or Retired Member-at-Large	1
<b>Total</b>	<b>5</b>

# OBJECTIVE 4: ENHANCE COMPANY-LEVEL MEMBERSHIP

Continued

**Chart – Annual Call Volume 2003-2021**

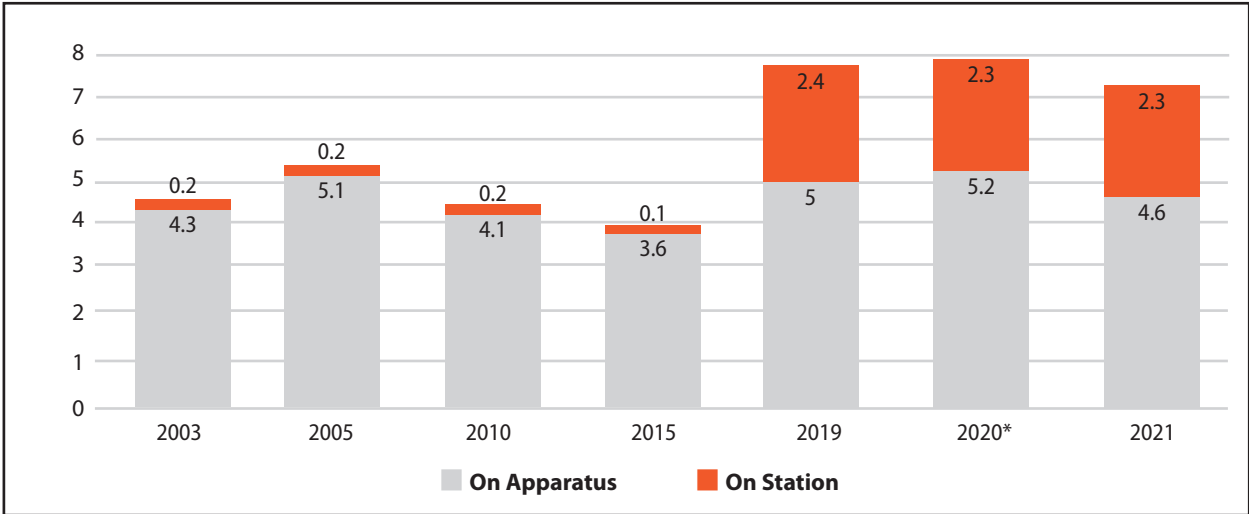


	2003	2005	2010	2015	2019	2020*	2021	% Change 2003-2019	% Change 2003- 2021
<b>Fire Calls</b>	481	478	564	629	554	469	494	+15%	2.7%

\*The significant increase in calls for the year 2011 was the direct result of additional calls for service due to Hurricane Irene.

\*\*Preliminary indications from varying sources indicate that due to the Covid-19 pandemic and associated stay-at-home recommendations, call volume decreased for fire-rescue and emergency medical services statewide for most of 2020.

**Chart – Staffing Per Call**



# OBJECTIVE 4: ENHANCE COMPANY-LEVEL MEMBERSHIP

Continued

	2003	2005	2010	2015	2019	2020*	2021	% Change 2003-2019	% Change 2003- 2021*
<b>On Apparatus</b>	4.3	5.1	4.1	3.6	5.0	5.2	4.6	+16%	+7%
<b>On Statio</b>	0.2	0.2	0.2	0.1	2.4	2.3	2.3	+1100%	+1050%
<b>Total Staffing**</b>	4.5	5.3	4.3	3.7	7.4	7.5	6.9	+64%	+53%

*\*Preliminary indications from varying sources indicate that due to the Covid-19 pandemic and associated stay-at-home recommendations, call volume decreased for fire-rescue and emergency medical services statewide for most of 2020. For staffing, it appears to have slightly increased during this time period.*

*\*\*The additional On Station staffing is the result of additional record keeping implemented in 2017.*

The staffing counts represented on the Staffing Per Call Chart reflect the tracking policy the fire department now uses to collect the number of members responding to a fire call, also known as a call for service. The first row, On Apparatus, represents the number of firefighters on apparatus that physically responded to a call for service. The second row, On Station, represents the number of firefighters that stood-by at the fire station.

These members stood-by for two reasons. The first is to staff additional apparatus that may be needed to respond to the initial call for service. The second reason is to staff apparatus for additional calls for service while the previously dispatched apparatus is still committed. Therefore, the Total Staffing is the key number. It reports the total number of members who took time out of their day to respond to the call for service.

Additionally, please note the call volume and staffing count for the year 2020. In March of 2020, the world was struck with the COVID-19 pandemic. The emergency stay-at-home orders that were issued resulted in many non-essential day-to-day activities being temporarily halted. This, along with many employers providing alternate work schedules and the ability for employees to work from home, accounted for additional members being available to respond to calls for service.

## OBJECTIVE 4: ENHANCE COMPANY-LEVEL MEMBERSHIP

Continued

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The change of habits that resulted in the pandemic resulted in a decrease for calls for service that broke the increasing yearly call totals starting in 2003. Please note that in the case of Lower Swatara Volunteer Fire Department, call volume decreased and staffing increased. This corresponds directly to reports from other fire and ambulance agencies across the state and country. The pandemic has caused a decrease in calls for service and an increase in per call staffing for all-volunteer or volunteer-combination agencies. However, this may have been a short-lived event. Early indications from end of year 2021 call volume totals from other agencies indicate the previous upward trends in call volume are continuing again. Maintaining the volunteer-based fire-rescue system will produce significant cost avoidance until the need fire career staffing occurs. The estimated cost to replace the volunteer staff with career staff will be in excess of \$1 million per year.

**Task Assignment:** The vice president of the fire department should implement this objective. Once implemented, the Membership Team will manage the program and will report back to the officers at the workshop meeting and membership on a monthly basis.

**DATE FOR IMPLEMENTATION**  
**March 1 – December 31, 2022**

## OBJECTIVE 5: ADOPT APPARATUS FLEET PLAN

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### RECOMMENDED OUTCOMES

- **Maintain engine, engine/tanker, and heavy rescue**
- **Fire department continues to purchase and maintain fleet**
- **Township provides purchase allotment**

### Fire Apparatus Fleet Review

This section provides a review of the fire apparatus fleet, citing established national standards, for the Lower Swatara Volunteer Fire Department. The review included a physical onsite review of the current fire apparatus inventory, a review and discussion with the Lower Swatara Volunteer Fire Department officer staff regarding the fire apparatus maintenance procedures and maintenance schedule, and included a review of maintenance documents. Also, a suggested replacement schedule is included as part of the fire apparatus review.

### Fire Apparatus Fleet Requirements Defined

There are several standards and guidelines that apply to fire and rescue fleet apparatus. Numerous standards have been developed through a standards development and approval process by various standards committees of the National Fire Protection Association (NFPA). These NFPA standards provide input for not only design of fire apparatus, but also testing of apparatus (and equipment) throughout the life cycle of the fire apparatus. Also, the Insurance Services Office (ISO) makes recommendations on fire apparatus fleet requirements and capabilities through the Public Protection Classification (PPC) process for an individual municipality and ISO references the NFPA standards as a benchmark.

### Current Fire Apparatus Fleet Inventory

The following chart shows the current motorized vehicle fleet for the Lower Swatara Volunteer Fire Department. The chart does not consider water rescue craft (boats) or a foam trailer; these items were not considered as part of the fire apparatus fleet review. Units in the fleet are displayed in year order:



## OBJECTIVE 5: ADOPT APPARATUS FLEET PLAN Continued

Unit Designator	Year	Manufacturer	Type of Unit
Utility 59-1	2004	Ford F550	Utility
Engine 59	2012	Ferrara	Pumper
Rescue 59	2014	Ferrara	Rescue
Utility 59	2015	Ford F550	Utility/Light Rescue
Boat 59	2015	Rockproof Custom	Rescue Boat
Chief 59-1	2016	Chevrolet Tahoe	Chief/Duty Officer
Tanker 59	2018	Pierce	Pumper/Tanker
Chief 59	2021	Chevrolet Silverado	Chief/Duty Officer

### Fire Apparatus Needs Based on ISO PPC Rating

Lower Swatara Township, as of January 1, 2019, was rated by the ISO PPC as a Class 5/5X. As part of the PPC process, the fire apparatus fleet is matched against the fire protection needs of the community.

The current PPC rating provided the following credit for the current fire apparatus fleet:

Category	Earned Credit	Credit Available
Credit for Engine Companies	4.86	6.00
Credit for Reserve Pumpers	0	0.5
Credit for Pumper Capacity	3.00	3.00
Credit for Ladder Service	1.56	4.00
Credit for Reserve Ladder and Service Trucks	0	0.5

The ISO PPC identified and based the credit for needed pumpers off response distance to built-upon areas of the township, the Basic Fire Flow (identified as 3,500 gallons per minute), and the method of operation. The credit and need for ladder and service companies is identified based upon the number of buildings 3 stories or 35 feet or more in height and buildings with a Needed Fire Flow greater than 3,500 gallons per minute, and the method of operation. The ISO PPC was considered as part of the fleet review.

## OBJECTIVE 5: ADOPT APPARATUS FLEET PLAN Continued

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It should be noted that ladder service is provided on an automatic aid basis to Lower Swatara Township from the Middletown and Steelton Fire Departments. Mutual aid ladder service is also provided by Swatara, Hummelstown, and Hershey Fire Departments. The Lower Swatara Volunteer Fire Department does not maintain an aerial ladder in its fleet. The mutual aid provision of ladder service is considered as part of the PPC rating.

While an aerial device will not be suggested at this time for the Lower Swatara Volunteer Fire Department, primarily due to staffing concerns and cost, at the recommended time for replacement of Rescue 59 consideration should be given to:

- Review current ISO PPC at the time of replacement. If development has continued within Lower Swatara Township that warrants increased need for aerial ladder services, consideration may be given to replacing Rescue 59 with an aerial device
- If an aerial device is not warranted at the time of replacement of Rescue 59, consideration should be given to the ISO PPC equipment listing that would increase the ability of a replacement unit to meet full credit as a Service Company for the PPC rating.

### **Distribution of Fire Apparatus**

Distribution and deployment of fire apparatus – the geographic location of where they are located and respond from within an assigned fire response district – was not specifically reviewed as part of the fire apparatus fleet review.

### **Fire Apparatus Fleet Replacement**

A generally accepted fact is that all fleet vehicles, whether fire service or other, have a service life expectancy. The length of that service life for fire apparatus will depend on a multitude of factors that will include mileage, engine hours, pump hours (if applicable), type and quality of preventive maintenance program, type and quality of driver training, use/abuse of the fire apparatus, commercial or custom chassis, quality/craftsmanship of the original manufacture, quality of components, and readily available replacement parts. While some factors are difficult to quantify, such as the effectiveness of driver training, other factors can be quantified by applying appropriate standards.

The most recognized standards that are used and pertain to fire apparatus fleets, their life expectancy, and their ultimate replacement, include:

## OBJECTIVE 5: ADOPT APPARATUS FLEET PLAN Continued

- **National Fire Protection Association (NFPA):**
- **Standard 1901 – Standard for Automotive Fire Apparatus**
  - ◊ The 1901 Standard specifies the design, equipping, and testing of new and refurbished fire apparatus.
- **Standard 1911 – Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles**
  - ◊ The 1911 Standard provides extensive guidance for the routine maintenance and testing of fire apparatus. It provides performance test guidelines that assist in determining the serviceability of fire apparatus and recommendations on service life. The standard does recommend that fire apparatus that are more than 15 years old and that have been properly maintained and that are still in serviceable condition be placed in reserve status. Any vehicles that are 25 years old should be replaced.
- **Standard 1912 – Standard for Fire Apparatus Refurbishing**
  - ◊ The 1912 Standard outlines requirements for two (2) levels of fire apparatus refurbishment (Level I and Level II). This standard would apply to any front-line fire apparatus that is refurbished at any time in its life cycle.
- It should be noted that ISO uses the NFPA standards as a benchmark for the PPC process.

### American Public Works Association (APWA):

#### Vehicle Replacement Schedule

The American Public Works Association vehicle replacement guide uses a weighted point system based on age, usage, type of service, maintenance and repair costs, and overall condition of the vehicle. This weighted point system allows for a more subjective review of a vehicle based on actual conditions.

<b>Age</b>	1 point for every year of chronological age, based on in-service date	
<b>Mileage/Hours</b>	1 point for each 10,000 miles or 1,000 engine hours of use	
<b>Type of Service</b>	1, 3, or 5 points based on type of service the unit is exposed to. First-line fire apparatus are classified as severe duty service	
<b>Reliability</b>	1, 3, or 5 points based on the frequency that the vehicle is in the shop for repair. A 5 would be assigned to a vehicle that is in the shop two or more times per month on average while a 1 would be assigned to a vehicle that is in the shop for repair once every 3 months or less	
<b>Maintenance &amp; Repair Costs</b>	1 to 5 points based on the total life maintenance and repair costs	
<b>Condition</b>	This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc. A scale of 1 to 5 is used, with 5 being poor condition	
<b>Point Range</b>	Fewer than 18 points:	Excellent Condition
	18 to 22 points:	Good Condition
	23 to 27 points:	Qualifies for Replacement
	28 points or above	Needs immediate consideration

## OBJECTIVE 5: ADOPT APPARATUS FLEET PLAN Continued

### Lower Swatara Fire Department Fire Apparatus Fleet Review – APWA

When performing a review of the Lower Swatara Volunteer Fire Department fleet, the three primary units (Engine 59, Rescue 59, and Tanker 59) were the only units specifically reviewed in regard to current and future needs and replacement. When reviewing using the APWA Vehicle Replacement Schedule standards, the following data is presented:

<b>ENGINE 59</b>	<b>2012 Ferrara Engine</b>	
<b>Age</b>	2012	9 points
<b>Mileage/Hours</b>	23,094 miles	2 points
<b>Type of Service</b>	Front-line / severe duty	5 points
<b>Reliability</b>	Repair average: 3 per quarter	3 points
<b>Maintenance &amp; Repair Costs</b>	Costs above average for 9-year-old vehicle	4 points
<b>Condition</b>	Previous and anticipated issues based on unit history	4 points
<b>NOTES</b>	Some design issues complicate operational effectiveness, such as DEF fill located under cab, requiring cab to be lifted to fill DEF, as an example.	
	<b>TOTAL POINTS</b>	<b>27 points</b>

<b>RESCUE 59</b>	<b>2014 Ferrara Rescue</b>	
<b>Age</b>	2014	7 points
<b>Mileage/Hours</b>	18,985 miles	2 points
<b>Type of Service</b>	Front-line / severe duty	5 points
<b>Reliability</b>	Repair average: 3 per quarter	3 points
<b>Maintenance &amp; Repair Costs</b>	Costs roughly average for 7-year-old vehicle	3 points
<b>Condition</b>	Previous and anticipated issues based on unit history	3 points
<b>NOTES</b>	Significant front end alignment issue at 30mph-50mph, has been unable to be corrected.	
	<b>TOTAL POINTS</b>	<b>23 points</b>

<b>TANKER 59</b>	<b>2018 Pierce Pumper/Tanker</b>	
<b>Age</b>	2018	5 points
<b>Mileage/Hours</b>	4,956 miles	1 point
<b>Type of Service</b>	Front-line / severe duty	5 points
<b>Reliability</b>	Repair average: <1 per quarter	1 point
<b>Maintenance &amp; Repair Costs</b>	Expected costs, not excessive	1 point
<b>Condition</b>	Excellent overall condition	1 point
<b>NOTES</b>	Some design issues complicate operational effectiveness, such as DEF fill located under cab, requiring cab to be lifted to fill DEF, as an example.	
	<b>TOTAL POINTS</b>	<b>14 points</b>

## OBJECTIVE 5: ADOPT APPARATUS FLEET PLAN Continued

Based on the APWA Vehicle Replacement Schedule ratings, the Lower Swatara Fire Department fleet rates as follows:

Excellent	Good	Qualifies for Replacement	Immediate Consideration
<b>Tanker 59</b>		Engine 59	
		Rescue 59	

### Fire Apparatus Fleet Recommended Replacement Schedule

Based upon in-person inspection and review of the Lower Swatara Volunteer Fire Department fleet, review of maintenance and repair records, as well as considering the recommendations of the ISO PPC rating for Lower Swatara Township, NFPA recommendations, and the APWA Vehicle Replacement Schedule ratings, the following fire apparatus replacement schedule is being presented for consideration for the Lower Swatara Volunteer Fire Department:

Year	Unit Designation	Suggested Replacement	Immediate Consideration
<b>2012</b>	Engine 59	2023	\$650,000.00-\$700,000.00
<b>2014</b>	Rescue 59	2029	\$900,000.00+
<b>2018</b>	Tanker 59	2033	Unable to accurately estimate due to extended time frame – would reasonable expect \$900,000.00+
	<b>TOTAL ESTIMATED COST</b>		<b>\$2,450,000.00-\$2,500,000.00+</b>

### Comments Regarding the Fire Apparatus Fleet and the Recommended Replacement Schedule

- **Resale value** – It is difficult to determine resale value of fire apparatus. Resale value can vary depending on factors such as if the vehicle is “traded-in” to a vendor during the purchase of a new unit; whether the fire apparatus is advertised and sold by the fire department; whether the fire apparatus is sold to a used fire apparatus broker. Resale value is also affected by the condition of the unit at the time of sale. With myriad factors affecting resale value, there is no resale value estimated in this Replacement Schedule. It should simply be noted that there is some resale value for each unit that would reduce the overall cost of the proposed Replacement Schedule

## OBJECTIVE 5: ADOPT APPARATUS FLEET PLAN Continued

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- The proposed Fire Apparatus Fleet Recommended Replacement Schedule only includes the three (3) primary front-line fire apparatus for Lower Swatara Volunteer Fire Department. It does not include utility/squad apparatus, sport utility vehicles for Chief officer use, or specialized equipment such as boats and trailers. These items must be considered as part of a full Fire Apparatus Fleet Replacement program. A typical replacement cycle for those types of units in a fire service fleet is:
  - ◇ Boats – replacement on a 20-year service life
  - ◇ Command/Chief units – replacement on a 6-year service life
  - ◇ Utility/Pickups – replacement on an 8-year service life
- Fleet Consolidation. ***We would recommend no additional fleet consolidations occur.*** The purchase of the 2018 pumper/tanker consolidated two (2) units (1992 tanker and 1998 engine) into a single unit, reducing the size of the fleet and saving future capital costs. In 2021, the fire department also reduced the chief/duty officer vehicle fleet from three to two vehicles. Reviewing the current staffing statistics, coupled with ISO PPC recommendations, we believe three (3) front-line fire apparatus is most appropriate for Lower Swatara Volunteer Fire Department.
- Suggested Replacement Year. It is recommended that the Engine 59 unit be replaced earlier than the 15-year life cycle. In reviewing this unit and its maintenance records, a list of issues can be identified that would justify early replacement for this unit. The issues include pump/shift issues that result in the unit being unable to pump water; corrosion issues to the body and frame; back-feeding issues of foam into the water booster tank; lack of ergonomic design that pose potential safety/injury issues to personnel. There also appear to be excessive maintenance/repair issues and costs on an ongoing basis. ***A funding plan needs to be part of the apparatus plan in order to be implemented.***

***Additionally, the apparatus replacement cycle can be extensive. From the time the process starts with an assessment of the apparatus that is scheduled to be replaced, specifications developed, order placed, and final delivery occurs, it could take several years.***

Accelerating the replacement of the engine also allows the replacement schedule to be somewhat staggered to accommodate an approximately 5-year window between replacements of front-line apparatus.

## OBJECTIVE 5: ADOPT APPARATUS FLEET PLAN Continued

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**Task Assignment:** The objective should be put into action by the fire department president and fire chief along with the township fire department liaisons. Once implemented, it should be managed day-to-day by the operational line officers in cooperation with the fire-rescue advisory committee.

**DATE FOR IMPLEMENTATION**  
**March 1, 2023 – December 31, 2024**

## OBJECTIVE 6: ENHANCE LOCAL AND REGIONAL PARTNERSHIPS

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### RECOMMENDED OUTCOMES

- **Expand regional recruitment, training, deployment, and staffing partnerships**
- **Re-establish relationships with state level agencies**

On the regional level, many opportunities exist to expand relationships with neighboring fire-rescue organizations. The fire department has a good reputation among its peers. Over the last few years, the company has started to work even more closely with their neighbors. During the small and large group discussions, members identified several new partnerships that could benefit not only the fire department and township but also the region.

One of the first projects is a **regional recruitment program**. This effort would focus on the lower Dauphin County area and the fire-rescue agencies that have a service area that covers the same geographic area as the Middletown Area School District and Lower Dauphin School District. Members also saw the opportunity to do more on basic and advanced **training in specialty areas** including aerial apparatus functions and technical rescue services.

Another opportunity is deployment and staffing. As one officer stated, “We don’t need a ladder truck.” **A regional, coordinated program for apparatus purchases can eliminate costly duplication.** The members saw this as a path to more formal regionalization of services in the next three to five years as the number of volunteers continues to decrease. The need for paid staff will add additional costs well beyond what is currently budgeted. By building those regional relationships now, when it is time to hire employees it could be done on a regional basis instead of each fire department and local government trying to do it on their own.

On the state level, Lower Swatara Volunteer Fire Department is very proud of the support it has provided to many state and federal specialty teams. This support happens when regional or national emergencies occur. With changes in gubernatorial administrations after an election on the state level and with the impact of the COVID-19 pandemic, past relationships have changed. **Re-establishing these relationships** will not only benefit the fire department but public safety in the region and state. In the past, the fire department has worked with the Pennsylvania Emergency Management Agency and the Pennsylvania Department of Conservation and Natural Resources. The company has provided its facilities as a staging location prior to deployment of these agencies outside the region and upon



## OBJECTIVE 6: ENHANCE LOCAL AND REGIONAL PARTNERSHIPS *Continued*

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their return. The fire department and township have a unique opportunity to provide support to these operations with the fire department's facility directly next to major transportation hubs including the Pennsylvania Turnpike, Harrisburg International Airport, and Amtrak's Keystone Passenger Corridor.

**Task Assignment:** This objective should continue to be supported by all officers and members of the fire department, along with support provided by the proposed strategic planning committee.

**DATE FOR IMPLEMENTATION**  
**March 1, 2022 – December 31, 2026**

## SUMMARY

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The overall assessment of Lower Swatara Volunteer Fire Department revealed a very diverse, successful organization. During the interview process, the following was observed:

- The fire department has a diverse membership base reflecting both blue-collar and white-collar backgrounds, junior members with a lot of enthusiasm, and older members that bring institutional knowledge that is lacking in many non-profit organizations today. Do disagreements still happen? Yes, but the fire department leadership strives for consensus building, which creates positive outcomes.
- Administrative officers have the education, training, and experience to make decisions in the best interest of the company. They work diligently to make the best administrative and financial decisions based on generally accepted business and accounting practices.
- Member communication is far better than most places. The focused electronic updates are important in today's hectic lifestyle. Not only are the members kept up to date on items of operational importance, but every other aspect of the company is shared with the membership. From training opportunities to fundraising events to congratulations on personal accomplishments and updates on members past and present, the company does a stellar job of keeping its members informed on the day-to-day business and life of the company.
- A "big" picture perspective. During the interview process, it was clear that the members saw the entire picture of the fire and emergency services today. Discussions involved the duplication of apparatus, favoritism, funding challenges, decreasing membership, and the future of the fire and emergency services in Pennsylvania and across the country.
- The need to work with your neighbors. The members are keenly aware that trying to stand alone is no longer in anyone's best interest. Working together will go further than the decades long sandbox mentality.
- Finally, a review of 2009 internal fire department documents and the 2020 fire department presentation to the township reveal the same concerns: if funding challenges are not addressed, the outcome will be the loss of the volunteer fire service. Today, the challenges remain. Day-to-day repairs, facility renovations, and apparatus replacement will not happen without a new, long-term funding plan.

In closing, "Lower Swat" is a solid, well-functioning organization and the officers and members do their best to manage the fire department with an all-volunteer staff in an everchanging world. Many places would envy not only the apparatus, equipment, and facilities but also the atmosphere that is present. Please do not overlook this fact. Everyone involved should be proud of the company and what it has accomplished in its six decades of service to Lower Swatara Township, the lower Dauphin County community, and its members. It will take everyone recognizing these past accomplishments and sharing in the responsibility of the current and future needs of the fire department to maintain a healthy volunteer-based fire-rescue system for the next five to seven years and beyond.

# WORK PLAN

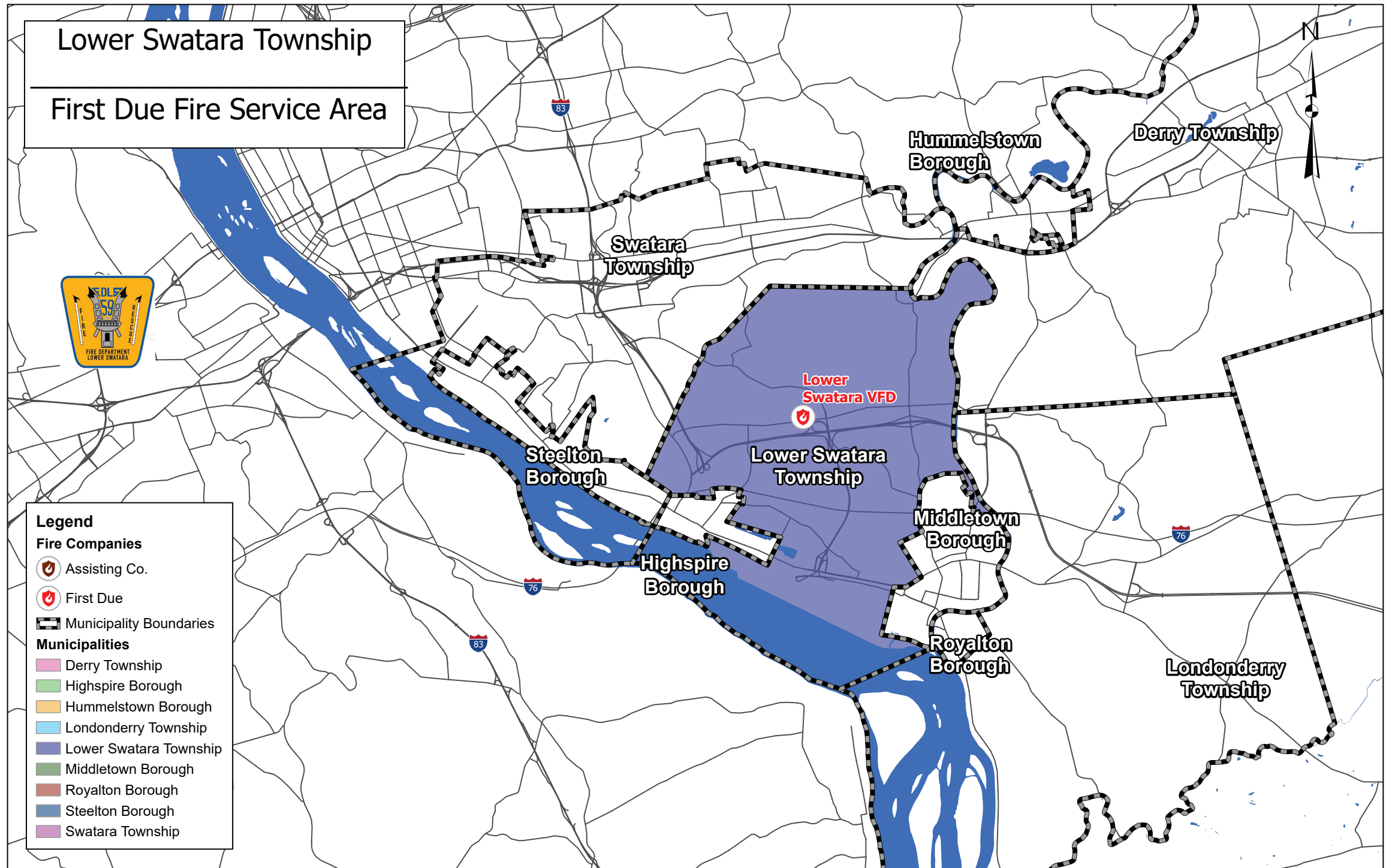
	2022	2023	2024	2025	2026
Review Fire Company/Township Relationship – (Years 1-2)	▲		▲		
Establish Community Fire-Rescue Advisory Board – (Year 1)	▲		▲		
Enhance Company Level Administrative Functions – (Year 1)	▲		▲		
Enhance Company Membership – (Year 1)	▲		▲		
Adopt Apparatus Fleet Plan – (Years 2-3)		▲		▲	
Enhance Local and Regional Partnerships (Years 1-5)	▲				
Mortgage Relief	■			■ TWP.	
Manage Maintenance	■			■ TWP.	
Workers Comp Insurance	■			■ TWP./V.F.D.	
Apparatus	■			■ V.F.D.	

# APPENDIX 1: INTERVIEWS

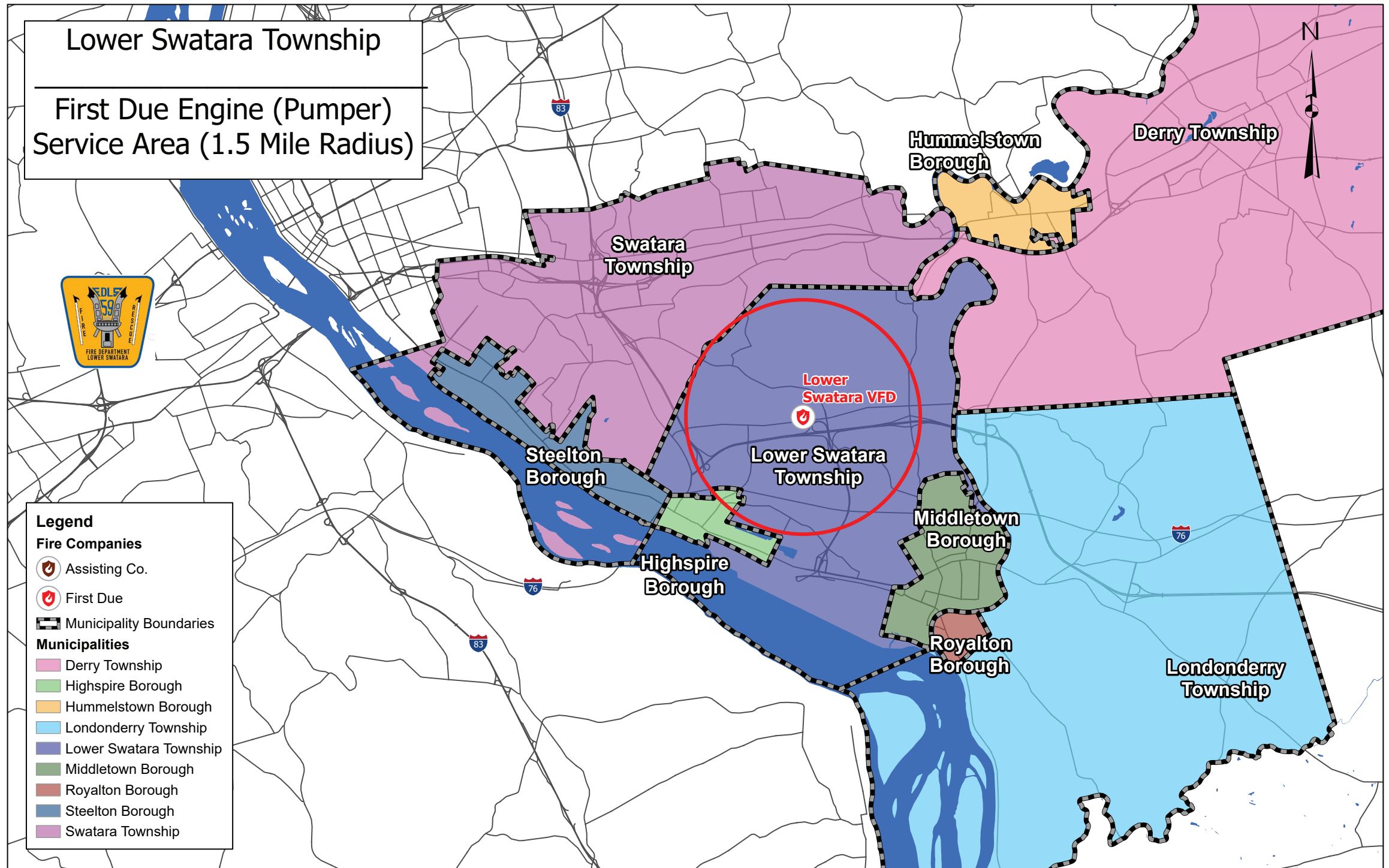
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## INTERVIEWS

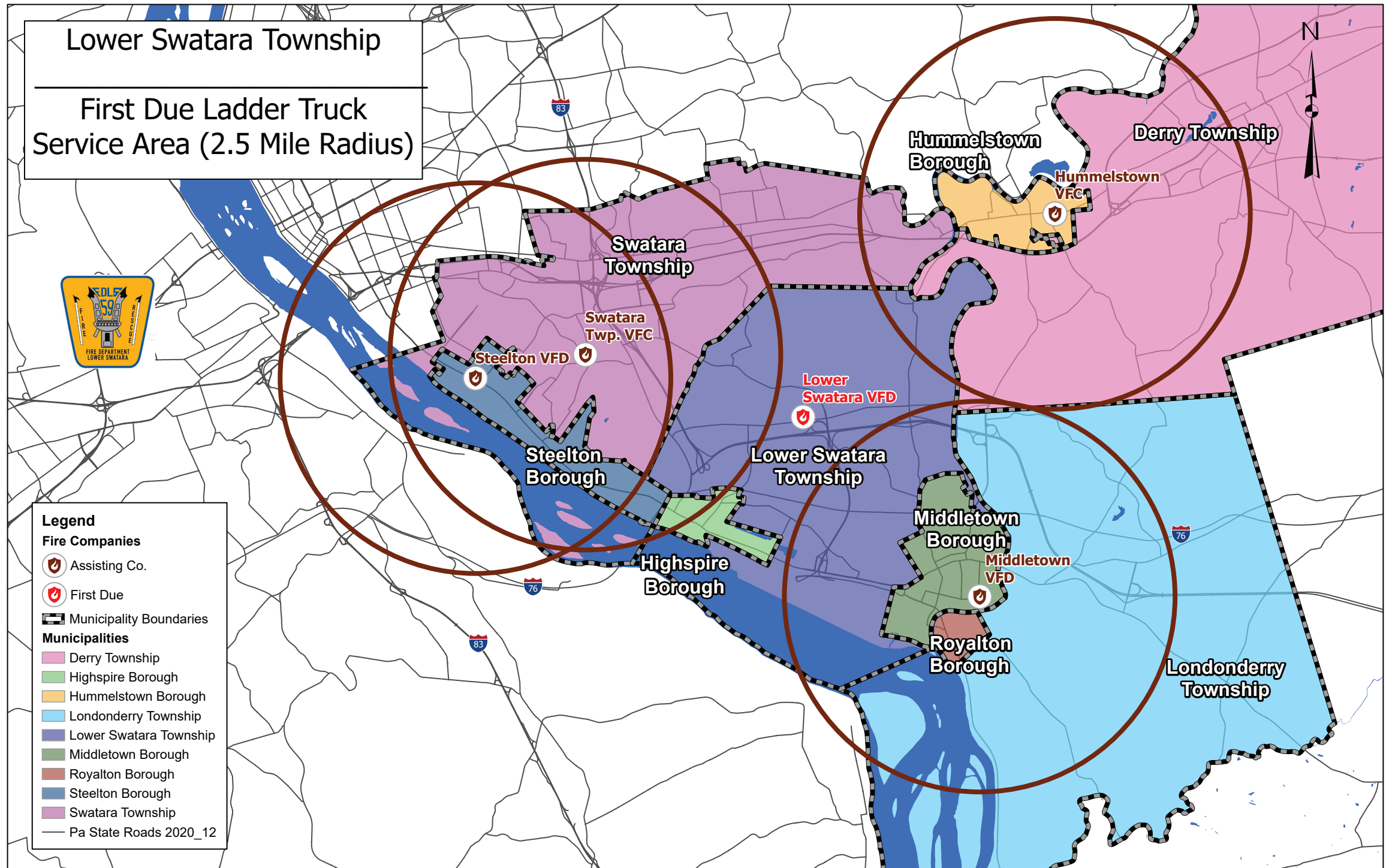
Group Interviewed	Date
Kick-off Meeting – Key Officers	February 2021
Data Collection and Review	March 2021
Initial Apparatus Review	April 2021
All Members Round Table Fire Department Meeting	May 2021
Township Fire Department Liaisons	June 2021
Officer Meetings	July 2021
Additional Data Collection	August 2021
Final Data Review and Interviews	September 2021 – January 2022



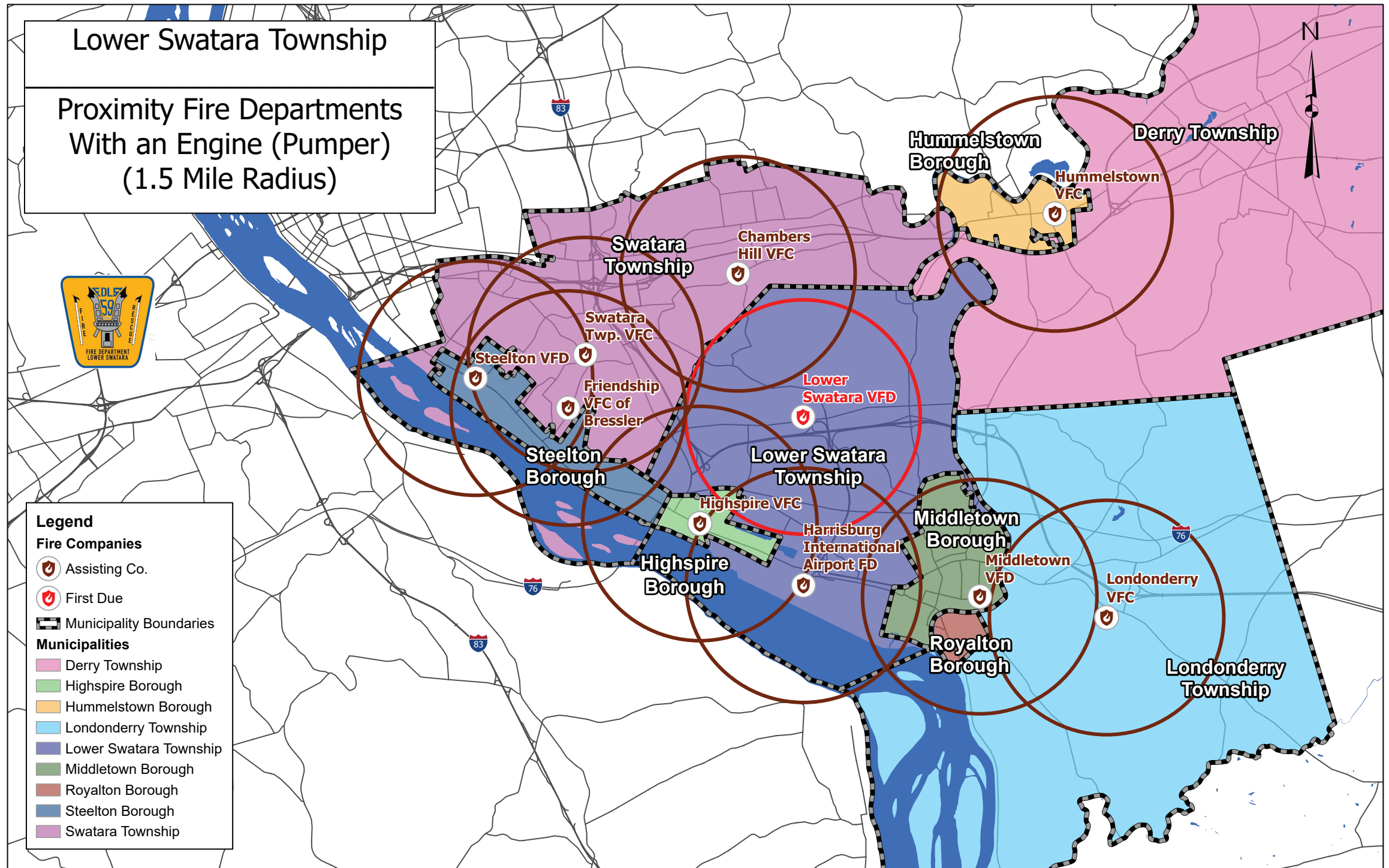
Map 1: First Due Service Area Map



**Map 2: Engine (Pumper) Response Map**



**Map 3: Ladder Truck Proximity Resources Map**



**Map 4: Engine (Pumper) Proximity Resources Map**



# APPENDIX 3: Lower Swatara Volunteer Fire Department Reserve Study

Historical data indicates building construction inflation of 3.5% per year over the past 10 years. Compounded rate of inflation to the right										1.035	1.071	1.108	1.147	1.187	1.229	1.272	1.316	1.362	1.410	1.459	
	COMMENTS	YR INSTALLED/ PURCHASED	LIFE EXPECTANCY	REPLACEMENT YEAR	YEARS REMAINING	UNIT	QUANTITY	UNIT REPLACEMENT COST 2021	TOTAL REPLACEMENT COST 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	REMARKS
<b>BUILDINGS AND GROUNDS</b>																					
<b>EXTERIOR ELEMENTS</b>																					
Concrete Tarmac - Maintenance	Replace 33% 2022, 2026,2030	2007	25	2032	11	CY	579	\$125.00	\$72,361.00	\$24,964	\$0	\$0	\$0	\$28,630	\$0	\$0	\$0	\$32,851	\$0	\$0	Replace 33% in 2047 = \$58,996
Macadam Pavement - Maintenance	Patch 15% per year	2007	20	2027	6	SF	75,246	\$2.58	\$194,134.00	\$30,139	\$31,188	\$32,265	\$33,401	\$34,565	\$35,788	\$37,041	\$0	\$0	\$0	\$0	Replace 15% in 2042 = \$59,970
Concrete Sidewalks - Maintenance	Replace 25% per year	2007	25	2032	11	CY	35	\$125.00	\$4,342.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,428	\$1,478	\$1,530	\$1,583	Replace 25% in 2053 = \$3,374
Concrete Curbs - Maintenance	Replace 25% per year	2007	25	2032	11	LF	1,480	\$13.50	\$20,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,580	\$6,810	\$7,050	\$7,295	Replace 25% in 2053 = \$15,550
Retaining Wall - Replacement		2007	40	2047	26	LS		\$25,000.00	\$25,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$43,349
Fence - Replacement		2007	40	2047	26	LS		\$25,000.00	\$25,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$43,349
Exterior Lights and Poles - Replacement		2007	40	2047	26	Each	8	\$2,500.00	\$20,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$34,679
Exterior Building Mounted Lights - Replacement		2007	20	2027	6	Each	20	\$1,000.00	\$20,000.00	\$0	\$0	\$0	\$0	\$0	\$24,580	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$48,909
Signage - Electronic Digital - Replacement		2007	25	2032	11	Each	1	\$9,000.00	\$9,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,131	Replacement cost in 2057 = \$30,031
<b>EXTERIOR SUBTOTAL</b>									<b>\$389,837.00</b>	<b>\$55,103</b>	<b>\$31,188</b>	<b>\$32,265</b>	<b>\$33,401</b>	<b>\$63,195</b>	<b>\$60,368</b>	<b>\$37,041</b>	<b>\$8,008</b>	<b>\$41,139</b>	<b>\$8,580</b>	<b>\$22,009</b>	<b>\$35,663.31</b>
<b>ADJUSTED FUNDING</b>	<b>\$42,000 per year X 3.5% inflation</b>									\$42,000	\$43,470	\$44,991	\$46,566	\$48,196	\$49,883	\$51,629	\$53,436	\$55,306	\$57,242	\$59,245	
Balance - year										-\$13,103	\$12,282	\$12,726	\$13,166	-\$14,999	-\$10,486	\$14,588	\$45,428	\$14,167	\$48,662	\$37,236	
<b>Running Balance</b>	Revise yearly contribution after 2027									-\$13,103	-\$821	\$11,906	\$25,071	\$10,072	-\$414	\$14,174	\$59,602	\$73,769	\$122,431	\$159,667	
<b>EXTERIOR BUILDING ELEMENTS</b>																					
Roof - Asphalt Shingles - Replacement		2007	25	2032	11	SQ	2,800	\$17.85	\$50,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$72,950	Replacement cost in 2057 = \$172,398
Exterior Walls - Maintenance	Repoint - approx 10% per year	2007	15	2022	1	SF	22,100	\$0.54	\$12,000.00	\$1,242	\$1,285	\$1,330	\$1,376	\$1,424	\$1,475	\$1,526	\$1,579	\$1,634	\$1,692	\$1,751	Replace 10% per year
Overhead Doors - Front - Replacement		2007	20	2027	6	Each	6	\$19,200.00	\$115,200.00	\$0	\$0	\$0	\$0	\$0	\$141,581	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$281,716
Overhead Doors Operators - Front -Replacement		2007	10	2017	0	Each	6	\$3,400.00	\$20,400.00	\$21,114	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2042 = \$41,985
Overhead Doors - Rear - Replacement		2007	20	2027	6	Each	4	\$11,600.00	\$46,400.00	\$0	\$0	\$0	\$0	\$0	\$57,026	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$113,418
Overhead Doors Operators - Rear - Replacment		2007	10	2017	0	Each	4	\$3,400.00	\$13,600.00	\$14,076	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,842	Replacement cost in 2042 = \$27,989
Doors - Aluminum Entrance & Hardware	Existing frames to remain	2007	30	2037	16	Each	3	\$3,500.00	\$10,500.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2037 = \$18,206
Doors - Exterior Hollow Metal & Hardware	Existing frames to remain	2007	30	2037	16	Each	10	\$1,646.00	\$16,460.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2037 = \$28,541
Windows - Single Metal Clad Wood		2007	40	2047	26	Each	26	\$477.00	\$12,402.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$30,330

# APPENDIX 3: Lower Swatara Volunteer Fire Department Reserve Study Continued

	COMMENTS	YR INSTALLED/ PURCHASED	LIFE EXPECTANCY	REPLACEMENT YEAR	YEARS REMAINING	UNIT	QUANTITY	UNIT REPLACEMENT COST 2021	TOTAL REPLACEMENT COST 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	REMARKS	
Windows - Triple Metal Clad Wood		2007	40	2047	26	Each	7	\$1,350.00	\$9,450.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$23,114
Caulking - Masonry Control Joints	Replace 10% per year	2007	10	2017	0	LF	600	\$5.78	\$3,468.00	\$358	\$371	\$383	\$397	\$411	\$425	\$440	\$455	\$471	\$488	\$505		Replace 10% per year
Caulking - Perimeter of Openings	Replace 10% per year	2007	0	2017	0	LF	1340	\$5.78	\$7,745.20	\$801	\$829	\$858	\$888	\$919	\$951	\$985	\$1,019	\$1,054	\$1,091	\$1,129		Replace 10% per year
Gutters		2007	40	2047	26	LF	886	\$10.00	\$8,860.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$21,671
Downspouts		2007	40	2047	26	LF	280	\$6.75	\$1,890.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$4,622
Soffit		2007	40	2047	26	SF	1700	\$5.50	\$9,350.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2047 = \$22,869
<b>EXTERIOR BUILDING SUBTOTAL</b>									<b>\$337,725.20</b>	<b>\$37,591</b>	<b>\$2,485</b>	<b>\$2,571</b>	<b>\$2,661</b>	<b>\$2,754</b>	<b>\$201,458</b>	<b>\$2,951</b>	<b>\$3,053</b>	<b>\$3,160</b>	<b>\$3,271</b>	<b>\$125,941</b>	<b>\$35,263</b>	
<b>ADJUSTED FUNDING</b>	<b>\$38,200 per year X 3.5% inflation</b>									\$38,200	\$39,537	\$40,921	\$42,353	\$43,835	\$45,370	\$46,958	\$48,601	\$50,302	\$52,063	\$53,885		
Balance - year										\$609	\$37,052	\$38,350	\$39,692	\$41,082	-\$156,088	\$44,007	\$45,548	\$47,142	\$48,791	-\$72,056		
Running Balance	Revise yearly contribution after 2027									\$609	\$37,661	\$76,011	\$115,703	\$156,785	\$697	\$44,703	\$90,251	\$137,393	\$186,185	\$114,129		
<b>INTERIOR BUILDING ELEMENTS</b>																						
Doors - Interior Solid Core Wood & Hardware	Existing frames to remain	2007	45	2052	31	Each	28	\$809.00	\$22,652.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2052 = \$55,802
Doors - Interior Hollow Metal & Hardware	Existing frames to remain	2007	45	2052	31	Each	20	\$1,009.00	\$20,180.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2052 = \$58,623
Flooring - Carpet - Replacement	Replace as required - 25% per year	2007	10	2017	0	SY	343	\$58.30	\$20,000.00	\$5,175	\$5,355	\$5,540	\$5,735	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,295	Continue replacement in 2033, 2034, & 2035
Flooring - VCT - Replacement	Replace as required - 25% per year	2007	15	2022	1	SF	3,520	\$5.68	\$20,000.00	\$0	\$5,355	\$5,540	\$5,735	\$5,935	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Flooring Ceramic Tile		2007	30	2037	16	SF	1,245	\$16.10	\$20,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2037 = \$34,679
Flooring - Apparatus - Epoxy Replacement		2007	30	2037	16	SF	7,485	LS	\$40,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2037 = \$69,359
Flooring - Training Center - VCT Replacement		2007	25	2029	8	SF	3,475	\$5.68	\$20,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$32,900	\$0	\$0	\$0		
Walls - Painting - Maintenance	Repaint as required - 10% per year	2007	10	2017	0	SF	45,156	\$0.55	\$25,000.00	\$2,588	\$2,678	\$2,770	\$2,868	\$2,968	\$3,073	\$3,180	\$3,290	\$3,405	\$3,525	\$3,648		
Walls - Ceramic Tile		2007	30	2037	16	SF	1,515	\$16.50	\$25,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2037 = \$43,349
Ceiling - Acoustical Tile	Replace as required - 10% per year	2007	25	2032	11	SF	11,660	\$2.58	\$30,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,377	
Ceilings - Painting - Maintenance	Repaint as required - 10% per year	2007	10	2017	0	SF	1,960	\$1.50	\$2,940.00	\$304	\$315	\$326	\$337	\$349	\$361	\$374	\$387	\$400	\$415	\$429		
Toilet Partitions / Accessories		2007	30	2032	11	Each	13	\$1,500.00	\$19,500.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,451	
Vanities		2007	30	2032	11	LF	16	\$1,250.00	\$20,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,180	

# APPENDIX 3: Lower Swatara Volunteer Fire Department Reserve Study Continued

	COMMENTS	YR INSTALLED/ PURCHASED	LIFE EXPECTANCY	REPLACEMENT YEAR	YEARS REMAINING	UNIT	QUANTITY	UNIT REPLACEMENT COST 2021	TOTAL REPLACEMENT COST 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	REMARKS
Kitchen Equipment	Replace as required - 10% per year	2007	20	2024	3	LS	1	\$100,000.00	\$100,000.00	\$0	\$0	\$11,080	\$11,470	\$11,870	\$12,290	\$12,720	\$13,160	\$13,620	\$14,100	\$14,590	
<b>INTERIOR BUILDING SUBTOTAL</b>									<b>\$385,272.00</b>	<b>\$8,067</b>	<b>\$13,702</b>	<b>\$25,256</b>	<b>\$26,145</b>	<b>\$21,121</b>	<b>\$15,724</b>	<b>\$16,274</b>	<b>\$49,737</b>	<b>\$17,425</b>	<b>\$18,040</b>	<b>\$87,969</b>	<b>\$27,223.61</b>
<b>ADJUSTED FUNDING</b>	<b>\$18,500 per year X 3.5% inflation</b>									\$18,500	\$19,148	\$19,818	\$20,511	\$21,229	\$21,972	\$22,741	\$23,537	\$24,361	\$25,214	\$26,096	
Balance - year										\$10,433	\$5,445	-\$5,438	-\$5,633	\$108	\$6,248	\$6,467	-\$26,200	\$6,936	\$7,174	-\$61,873	
Running Balance	Revise contribution after 2027									\$10,433	\$15,878	\$10,440	\$4,807	\$4,915	\$11,163	\$17,630	-\$8,570	-\$1,634	\$5,540	-\$56,333	
<b>BUILDING SYSTEMS</b>																					
Sprinkler System		2007	30	2037	16	System	1	\$45,000.00	\$45,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2037 = \$78,029
Plumbing Fixtures - Toilets		2007	25	2032	11	Each	16	\$625.00	\$10,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,590	
Plumbing Fixtures - Urinals		2007	25	2032	11	Each	6	\$625.00	\$4,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,836	
Plumbing Fixtures - Sinks		2007	25	2032	11	Each	13	\$625.00	\$8,200.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,964	
Plumbing Fixtures - Showers		2007	25	2032	11	Each	3	\$1,500.00	\$4,500.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,566	
Plumbing Fixture - Water Heater - 100 gal.		2007	20	2027	6	Each	1	\$10,000.00	\$10,000.00	\$0	\$0	\$0	\$0	\$0	\$12,290	\$0	\$0	\$0	\$0	\$0	
HVAC - Air Handlers		2007	25	2027	6	Each	3	\$50,000.00	\$150,000.00	\$0	\$0	\$0	\$0	\$0	\$184,350	\$0	\$0	\$0	\$0	\$0	
HVAC - Condensing Units		2007	25	2027	6	Each	3	\$50,000.00	\$150,000.00	\$0	\$0	\$0	\$0	\$0	\$184,350	\$0	\$0	\$0	\$0	\$0	
HVAC - Mini Split System		2007	25	2027	6	Each	1	\$15,000.00	\$15,000.00	\$0	\$0	\$0	\$0	\$0	\$18,435	\$0	\$0	\$0	\$0	\$0	
HVAC - Electric Wall Heaters		2007	25	2032	11	Each	7	\$1,500.00	\$10,500.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,320	
HVAC - Exhaust Fans		2007	25	2032	11	Each	10	\$1,000.00	\$10,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,590	
HVAC - Make Up Air Unit		2007	25	2032	11	Each	1	\$75,000.00	\$75,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$109,425	
HVAC - Computer Software		2021	5	2026	4	Each	1	\$25,000.00	\$25,000.00	\$0	\$0	\$0	\$28,675	\$0	\$0	\$0	\$0	\$34,050	\$0	\$0	
Electric - Emergency Generator - Replacement		2007	50	2057	36	Each	1	\$100,000.00	\$100,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2057 = \$345,026
Electric - Lights - Maintenance	Replace as required - 25% per year	2007	25	2032	11	Each	300	\$333.00	\$100,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,475	
Electric - Distribution Panels		2007	50	2057	36	System	1	\$50,000.00	\$50,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2057 = \$172,513
Electric - Fire Alarm System		2007	25	2032	11	System	1	\$50,000.00	\$50,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$72,950	
Electric - Data/Communication Systems		2007	25	2032	11	System	1	\$50,000.00	\$50,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$72,950	
Office Computers		2020	7	2027	6	System	1	\$5,500.00	\$5,500.00	\$0	\$0	\$0	\$0	\$0	\$6,760	\$0	\$0	\$0	\$0	\$0	Replacement cost in 2034 = \$8,600
Servers		2017	10	2027	6	System	1	\$17,000.00	\$17,000.00	\$0	\$0	\$0	\$0	\$0	\$20,893	\$0	\$0	\$0	\$0	\$0	
<b>BUILDING SYSTEMS SUBTOTAL</b>									<b>\$889,700.00</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$28,675</b>	<b>\$0</b>	<b>\$427,078</b>	<b>\$0</b>	<b>\$0</b>	<b>\$34,050</b>	<b>\$0</b>	<b>\$360,665</b>	<b>\$77,315</b>

# APPENDIX 3: Lower Swatara Volunteer Fire Department Reserve Study Continued

	COMMENTS	YR INSTALLED/ PURCHASED	LIFE EXPECTANCY	REPLACEMENT YEAR	YEARS REMAINING	UNIT	QUANTITY	UNIT REPLACEMENT COST 2021	TOTAL REPLACEMENT COST 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	REMARKS	
<b>BUILDINGS AND GROUNDS EXPENDITURES</b>										\$100,761	\$47,375	\$60,091	\$90,881	\$87,071	\$704,628	\$56,266	\$60,798	\$95,774	\$29,891	\$596,584	\$175,465	
<b>ADJUSTED FUNDING</b>										\$166,000	\$171,810	\$177,823	\$184,047	\$190,489	\$197,156	\$204,056	\$211,198	\$218,590	\$226,241	\$234,159		
Balance - year	\$166,000 first year, increased 3.5%									\$65,239	\$124,435	\$117,732	\$93,166	\$103,418	-\$507,472	\$147,791	\$150,400	\$122,816	\$196,350	-\$362,424		
<b>Running Balance</b>	per year = \$5,518 balance in 2027									\$74,239	\$198,674	\$316,406	\$409,572	\$512,990	\$5,518	\$153,309	\$303,709	\$426,526	\$622,876	\$260,452		
<b>FIREFIGHTING EQUIPMENT</b>																						
PPE equipment (turnout gear)	Replace 10% per year						40	\$4,500.00	\$180,000.00	\$18,630	\$19,278	\$19,944	\$20,646	\$21,366	\$22,122	\$22,896	\$23,688	\$24,516	\$25,380	\$26,262		
Hose replacement (all diameters)	Replace 10% per year						7,500'	\$4,875.00	\$48,750.00	\$5,046	\$5,221	\$5,402	\$5,592	\$5,787	\$5,991	\$6,201	\$6,416	\$6,640	\$6,874	\$7,113		
Self-contained breathing apparatus	Replace end of service life						27	\$7,000.00	\$7,000.00	\$0	\$0	\$0	\$0	\$0	\$258,660	\$0	\$0	\$0	\$0	\$0		
<b>FIREFIGHTING EQUIPMENT SUBTOTAL</b>									\$235,750.00	\$23,676	\$24,499	\$25,346	\$26,238	\$27,153	\$286,773	\$29,097	\$30,104	\$31,156	\$32,254	\$33,375		
<b>MORTGAGE</b>																						
Mortgage				2032	11	Each	1	\$81,000.00	\$1,000,000.00	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	Fully paid in 2032
<b>MORTGAGE SUBTOTAL</b>									\$1,000,000.00	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	
<b>APPARATUS REPLACEMENT</b>																						
Chief - Chevrolet Tahoe	6 year loan @ 4%	\$18,800/yr		2031	9	Each	1	\$65,000.00	\$65,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,800	Continue payments until 2037	
Chief - Chevrolet Silverado	6 year loan @ 4%	\$13,200/yr		2036	14	Each	1	\$65,000.00	\$65,000.00	\$13,200	\$13,200	\$13,200	\$13,200	\$13,200	\$13,200	\$0	\$0	\$0	\$0	\$0	\$0	
Tanker - Original Loan \$530,000	Current KS Loan	\$46,616/yr				Each	1			\$46,616	\$46,616	\$46,616	\$46,616	\$46,616	\$46,616	\$46,616	\$46,616	\$0	\$0	\$0		
Tanker - Original Loan \$200,000	Current State Loan	\$15,444/yr								\$15,444	\$15,444	\$15,444	\$15,444	\$15,444	\$15,444	\$15,444	\$15,444	\$15,444	\$15,444	\$15,444	\$15,444	Last payment May 2033
Tanker	15 year loan @ 3.2%	\$62,400/yr		2033	11	Each	1	\$730,091.00	\$730,091.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Engine	15 year loan @ 3.2%	\$66,800/yr		2023	1	Each	1	\$795,000.00	\$795,000.00	\$0	\$0	\$0	\$0	\$0	\$66,800	\$66,800	\$66,800	\$66,800	\$66,800	\$66,800	\$66,800	Continue payments until 2042
Rescue	15 year loan @ 3.2%	\$72,000/yr		2029	7	Each	1	\$850,000.00	\$850,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$72,000	\$72,000	\$72,000	\$72,000	\$72,000	Continue payments until 2044
Utility 59 (F550 with Utility Box)	6 year loan @ 4%	\$18,800/yr		2030	8	Each	1	\$150,000.00	\$150,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Utility 59-1 (Pick-up)	6 year loan @ 4%	\$17,800/yr		2019	-3	Each	1	\$95,000.00	\$95,000.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,800	\$17,800	\$17,800	\$17,800	continue payments until 2035
Boat	6 year loan @ 4%	\$9,770/yr		2035	13	Each	1	\$52,400.00	\$52,400.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>APPARATUS REPLACEMENT SUBTOTAL</b>									\$2,802,491.00	\$75,260	\$75,260	\$75,260	\$75,260	\$75,260	\$142,060	\$128,860	\$200,860	\$172,044	\$172,044	\$190,844		

# APPENDIX 3: Lower Swatara Volunteer Fire Department Reserve Study Continued

	COMMENTS	YR INSTALLED/ PURCHASED	LIFE EXPECTANCY	REPLACEMENT YEAR	YEARS REMAINING	UNIT	QUANTITY	UNIT REPLACEMENT COST 2021	TOTAL REPLACEMENT COST 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	REMARKS	
<b>ADJUSTED FUNDING</b>										\$111,500	\$115,403	\$119,442	\$123,622	\$127,949	\$132,427	\$137,062	\$141,859	\$146,824	\$151,963	\$157,282		
Balance - year	\$111,500 first year, increase 3.5%									\$36,240	\$40,143	\$44,182	\$48,362	\$52,689	-\$9,633	\$8,202	-\$59,001	-\$25,220	-\$20,081	-\$33,562		
<b>Running Balance</b>	per year - \$3,120 balance year 2032									\$36,240	\$76,383	\$120,564	\$168,926	\$221,615	\$211,982	\$220,184	\$161,183	\$135,963	\$115,882	\$82,320		
<b>APPARATUS MAINTENANCE</b>																						
								COST PER YEAR	COST 2021													
Chief - Chevrolet Tahoe								\$1,500.00	\$1,500.00	\$1,553	\$1,607	\$1,662	\$1,721	\$1,781	\$1,844	\$1,908	\$1,974	\$2,043	\$2,115	\$2,189		
Chief - Chevrolet Silverado								\$250.00	\$250.00	\$259	\$268	\$277	\$287	\$297	\$307	\$318	\$329	\$341	\$353	\$365		
Tanker								\$3,000.00	\$3,000.00	\$3,105	\$3,213	\$3,324	\$3,441	\$3,561	\$3,687	\$3,816	\$4,086	\$4,086	\$4,230	\$4,377		
Engine								\$8,000.00	\$8,000.00	\$8,280	\$8,568	\$8,864	\$9,176	\$9,496	\$9,832	\$10,176	\$10,528	\$10,896	\$11,280	\$11,672		
Rescue								\$3,200.00	\$3,200.00	\$3,312	\$3,427	\$3,546	\$3,670	\$3,798	\$3,933	\$4,070	\$4,211	\$4,358	\$4,512	\$4,669		
Utility 59 (F550 with Utility Box)								\$1,200.00	\$1,200.00	\$1,242	\$1,285	\$1,330	\$1,376	\$1,424	\$1,475	\$1,526	\$1,579	\$1,634	\$1,692	\$1,751		
Utility 59-1 (Pick-up)								\$2,500.00	\$2,500.00	\$2,588	\$2,678	\$2,770	\$2,868	\$2,968	\$3,073	\$3,180	\$3,290	\$3,405	\$3,525	\$3,648		
Boat								\$500.00	\$500.00	\$518	\$536	\$554	\$574	\$594	\$615	\$636	\$658	\$681	\$705	\$730		
<b>APPARATUS MAINTENANCE SUB TOTAL</b>								\$20,150.00	\$20,150.00	\$20,855	\$21,581	\$22,326	\$23,112	\$23,918	\$24,764	\$25,631	\$26,656	\$27,444	\$28,412	\$29,399		
<b>YEARLY FUNDING BUILDING AND GROUNDS</b>										\$166,000	\$171,810	\$177,823	\$184,047	\$190,489	\$197,156	\$204,056	\$211,198	\$218,590	\$226,241	\$234,159		
<b>YEARLY FUNDING FIREFIGHTING EQUIPMENT</b>										\$23,676	\$24,499	\$25,346	\$26,238	\$27,153	\$28,673	\$29,097	\$30,104	\$31,156	\$32,254	\$33,375		
<b>YEARLY FUNDING MORTGAGE</b>										\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	\$81,000	
<b>YEARLY FUNDING APPARATUS REPLACEMENT</b>										\$111,500	\$115,403	\$119,442	\$123,622	\$127,949	\$132,427	\$137,062	\$141,859	\$146,824	\$151,963	\$157,282		
<b>YEARLY FUNDING APPARATUS MAINTENANCE</b>										\$20,855	\$21,581	\$22,326	\$23,112	\$23,918	\$24,764	\$25,631	\$26,656	\$27,444	\$28,412	\$29,399		
<b>YEARLY GENERAL OPERATING BUDGET</b>										\$240,000	\$248,400	\$257,094	\$266,092	\$275,405	\$285,044	\$295,020	\$305,345	\$316,032	\$327,093	\$338,541		
<b>TOTAL YEARLY FUNDING</b>										\$643,031	\$662,692	\$683,031	\$704,111	\$725,913	\$1,007,165	\$771,866	\$796,162	\$821,047	\$846,962	\$873,756		
<b>YEARLY ANTICIPATED EXPENDITURES</b>										\$301,552	\$249,714	\$264,023	\$296,491	\$294,401	\$1,239,226	\$320,853	\$399,417	\$407,418	\$343,600	\$931,201		
<b>YEARLY ANTICIPATED RESERVE</b>										\$341,479	\$412,978	\$419,008	\$407,620	\$431,512	-\$232,061	\$451,013	\$396,745	\$413,628	\$503,362	-\$57,445		
<b>RUNNING BALANCE</b>										\$341,479	\$754,457	\$1,173,464	\$1,581,084	\$2,012,596	\$1,780,535	\$2,231,548	\$2,628,292	\$3,041,921	\$3,545,283	\$3,487,838		

APPENDIX 3: Lower Swatara Volunteer Fire Department Reserve Study Continued

	COMMENTS	YR INSTALLED/ PURCHASED	LIFE EXPECTANCY	REPLACEMENT YEAR	YEARS REMAINING	UNIT	QUANTITY	UNIT REPLACEMENT COST 2021	TOTAL REPLACEMENT COST 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	REMARKS
<b>ADJUSTED YEARLY FUNDING</b>	<b>YEARLY FUNDING NOTED ABOVE</b>									\$404,000	\$418,140	\$432,775	\$447,922	\$463,599	\$479,825	\$496,619	\$514,001	\$531,991	\$550,611	\$569,882	
YEARLY ANTICIPATED EXPENDITURES	<b>CREATES TOO LARGE OF</b>									\$301,552	\$249,714	\$264,023	\$296,491	\$294,401	\$1,239,226	\$320,853	\$399,417	\$407,418	\$343,600	\$931,201	
	<b>RUNNING BALANCE - REDUCE THEN</b>																				
YEARLY ANTICIPATED RESERVE	<b>INCREASE 3.5% PER YEAR</b>									\$102,448	\$168,426	\$168,752	\$151,431	\$169,198	-\$759,400	\$175,766	\$114,584	\$124,573	\$207,011	-\$361,319	
<b>RUNNING BALANCE</b>										\$102,448	\$270,874	\$439,625	\$591,056	\$760,254	\$854	\$176,620	\$291,203	\$415,776	\$622,787	\$261,468	
<b>NOTE: DUE TO THE BREATHING APPARATUS PURCHASE IN 2027, THE INITIAL FUNDING WAS INCREASED FROM \$360,000 TO \$404,000 THIS PLACES 2027 AT BREAK EVEN.</b>										2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	

## APPENDIX 4: KEY TERMINOLOGY

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**Career Firefighter:** An individual whose primary employment is as a firefighter for a municipality or other agency or company and who derives the majority of his earned income working in the fire service.

**Call for Service (aka Fire Call, 911 Call):** This term refers to any urgent, 911 fire, rescue and emergency medical call for assistance. This may also include non-emergency calls for service including but not limited to lock outs, home flooding, welfare checks, lift assists, lost persons, and animal rescues.

**Command:** This term refers to the individual in charge of the incident that is directing the activities of all other responders.

**Fire Station (aka Fire House, Engine House):** A fire station is a permanent structure or designated area established for storage of firefighting and rescue apparatus (fire engines, ladder trucks, ambulances, and related fire-rescue vehicles), personal protective equipment, firehose, fire extinguishers, and other related fire. In many cases it may also have kitchen, dormitory living and fitness facilities as well as work areas such as offices, meeting rooms, workshop, and laundry.

**Engine (aka Pumper, Fire Engine, Pump Truck):** A fire suppression vehicle that carries and pumps water and is designed to carry firehose used to supply water to the pump and attack, control and extinguish fire.

**Engine Company (aka Pumper Company):** A group of firefighters who are assigned to and man a fire "engine" (pumper) apparatus with a water pump and equipped with firehose and other tools related to fire extinguishment.

**Driver/Operator (aka Engineer, Pump Operator, Pump Technician, Chauffeur):** A firefighter who is responsible for driving the engine safely to the scene of the call and the operation of the pumps on an engine, to provide sufficient water to the firefighters on the hose. The term may be either a position title or a rank; usage varies among departments.

**Extrication:** The removal of a trapped victim such as a vehicle extrication, confined space rescue, or trench rescue; sometimes using hydraulic spreader, Jaws of Life, or other technical equipment.

**Fire Inspector:** A person who is responsible for issuing permits and enforcing the fire code, including any necessary premises inspection, as before allowing (or during) a large indoor gathering.

**Fire Marshal:** Administrative and investigative office for fire prevention and arson investigation

**Firefighter:** A rescuer extensively trained primarily to put out hazardous fires that threaten civilian populations and property to rescue people from car accidents, collapsed and burning buildings and other such situations. The increasing complexity of modern industrialized life with an increase in the scale of hazards has stimulated both advances in firefighting technology and a broadening of the firefighter-rescuer's remit.

## APPENDIX 4: KEY TERMINOLOGY Continued

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**Fire Police:** A volunteer firefighter, special police officer or constable who is part of a fire department, tasked with ensuring the safety and security of emergency scenes, traffic control, crowd management as well as general assistance to the fire department and other agencies.

**General Operating Expenses:** For the Lower Swatara Volunteer Fire Department, several day-to-day expenses are tallied under this budget category. It includes but is not limited to utilities, building repairs and maintenance, cleaning and janitorial, office supplies, accounting and legal services, computers and website, insurances including workers compensation, vehicle fuel, real estate taxes (cell tower), fire prevention, miscellaneous firefighting equipment, fund raising, and members benefits.

**Hazardous Materials:** Any materials which may include solids, liquids, or gasses which may cause injury, death, or damage if released or triggered.

**ISO Rating (Insurance Services Office Public Protection Classification Rating):** This is a rating number published by the Insurance Services Office used by insurance companies in many states to determine homeowner insurance premiums. Recently some insurance companies, including State Farm, have now adopted a per-zip-code, actual loss, based system in several states and no longer use the ISO (PPC) system.

**Ladder Truck (aka Ladder, Hook and Ladder, Truck, Snorkel):** A fire truck that has an extension ladder, carries certain firefighting equipment, and can be set up to flow large quantities of water from an elevated position is called a "Ladder Truck."

**Truck Company (aka Ladder Company):** A group of firefighters assigned to staff an apparatus that carries aerial and ground ladders, forcible entry tools, possibly extrication tools and salvage covers, and who are otherwise equipped to perform rescue, ventilation, overhaul and other specific functions at fires; also called "ladder company".

**Quint:** A combination type of firefighting apparatus with five defining attributes. The Quint apparatus is both a Pumper and a Ladder truck. A "Quint" has: 1. a pump, 2. hose, 3. a water tank, 4. ground ladders, and 5. an aerial ladder.

**Mass casualty incident (MCI):** Any incident that produces many injured persons requiring emergency medical treatment and transportation to a medical facility. The exact number of patients that makes an incident "mass casualty" is defined by departmental procedures and may vary from area to area.

**Automatic Aid:** A formal or non-formal agreement between neighboring fire departments, ambulance services and rescue squads to "automatically" assist each other on the "initial" dispatch to an emergency when apparatus and manpower are available.



## APPENDIX 4: KEY TERMINOLOGY Continued

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**Mutual Aid:** A formal or non-formal agreement between neighboring fire departments, ambulance services and rescue squads to assist each other when “requested” by the officer-in-charge of the neighboring agency to an on-going emergency when apparatus and manpower are available.

**NFPA (National Fire Protection Association):** A research group which sets several standards and best practices for firefighting, equipment, and fire protection in the United States. These standards have also been adopted in many other countries around the world.

**Rescue:** Physical removal of a live person or animal from danger to a place of comfort.

**Rescue Company:** A group or squad of firefighters trained and equipped to enter adverse conditions and rescue victims of an incident. In some areas of jurisdictions, this is often delegated to a Truck Company.

**Rescue Engine:** A single piece of fire apparatus that can operate as either a rescue or an engine. This apparatus normally is outfitted with heavy rescue equipment, hose lines, pump, water tank, etc.

**SCBA (Self Contained Breathing Apparatus):** Specialized breathing equipment which has an oxygen tank and mask. This equipment keeps firefighters and other rescue personnel from breathing in smoke and other hazardous gases. This equipment is part of a firefighter’s personal protective equipment (PPE).

**Standard Operating Procedure, Guideline (SOP or SOG):** Rules for the operation of a fire department, such as how to respond to various types of emergencies, training requirements, use of protective equipment, radio procedures; often include local interpretations of regulations and standards. In general, "procedures" are specific, whereas "guidelines" are less detailed.

**Structure Fire (aka Structural Fire, Building Fire, House Fire):** A fire in a residential or commercial building. Urban fire departments are primarily geared toward structural firefighting.

**Tanker (aka Tender, Water Tender):** A road-based fire apparatus equipped to carry large volumes of water to a fire. This piece of apparatus is typically used in rural areas without an adequate supply system, such as rural areas without hydrants. Tenders may have pumps and associated hardware to facilitate their mission. In some regions of the country, fire departments refer to this apparatus as Tenders or Water Tenders.

**Turnout Gear (Bunker Gear, Turn Outs):** The protective clothing worn by firefighters and other rescue personnel made of a fire-resistant material such as Nomex or Aramid and designed to shield against extreme heat. This includes jacket, pants, helmet, gloves, fire-resistant hood, and boots. This equipment is part of a firefighter’s personal protective equipment (PPE).

## APPENDIX 4: KEY TERMINOLOGY Continued

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**Universal Precautions:** The use of safety barriers including gloves, mask, goggles to limit an emergency responder's contact with contaminants, especially fluids of sick and injured patients.

**Volunteer fire department:** An organization of part-time firefighters who may or may not be paid for on-call time or firefighting duty time, but who in nearly all states are held to the same professional training standards and take the same examinations to advance in rank as career firefighters. [In some regions, particularly eastern New York, New Jersey, Pennsylvania and Maryland volunteer fire departments and fire protection districts have independent taxing authority and are equally as well equipped and paid while working as career fire department members.]

**Wildfire or Wildland Fire:** A fire in forests, grasslands, prairies, or other natural areas, not involving structure fires, although wildland fires may threaten structures or vice versa.

**Professional Firefighter:** All firefighters are classified as "professionals" by both the International Association of Fire Chiefs (IAFC) and the International Association of Fire Fighters (IAFF trade union). All firefighters are required by most state laws and general practice to meet the same training and equipment standards, take the same examinations for promotion and perform the same work under the same hazards. There are two accepted categories of Professional Firefighters--Volunteer Firefighters who may or may not receive pay for services and Career Firefighters whose primary employment and source of earned income is in the fire service.

**Fire Apparatus:** Fire-Rescue Apparatus is divided into seven categories by National Fire Protection Association, Standard 1901. This includes Pumper Fire Apparatus, Initial Attack Apparatus, Mobile Water Supply Apparatus, Aerial Apparatus, Quint Fire Apparatus, Special Service (Rescue) fire apparatus, and Mobile Foam fire apparatus. Each of the categories are defined in detail by the NFPA Standard to which all fire apparatus must be constructed in the United States.

**Emergency Medical Services (Ambulance Service, Paramedic Service, Rescue Squad, First Aid Squad, FAST Squad, Emergency Squad, Ambulance Squad, Ambulance Corps, Life Squad, EMS):** An emergency service that provides urgent, 911 pre-hospital emergency medical care, treatment, stabilization, and transport for persons who are sick or injured.