# The Importance of Fire Suppression Systems in Historic Buildings

Insights from Downtown Frederick, Maryland



PRESERVATION MARYLAND

downtown frederick PARTNERSHIP

# About The Report

Preservation Maryland's mission statement is to preserve Maryland's history through advocacy, funding, and outreach. The non-profit organization's mission also includes revitalizing communities, investing in the future, and building a workforce of historic tradespeople.

Downtown Frederick Partnership works to enhance, promote, and preserve the vitality, livability, and diversity of Downtown Frederick — a national Main Street community.

This report was authored by Preservation Maryland and Downtown Frederick Partnership with special support from Preservation Maryland intern, Caroline Sewell.

Special thanks to local stakeholders who contributed to the project, including Andrew Welker, Senior Development Manager at Ausherman Properties; Steve Krone, Fire Protection Engineer for the City of Frederick; and Robert Asbury, architect with Noelker and Hull Associates, Inc.

Front cover photos: Preservation Maryland and Michael DeMattia.

# Introduction

Fire suppression systems are critical to safeguarding lives, protecting built assets, and growing the economic vitality of downtowns. They are also very costly to install. As towns and cities across the United States face the challenge of balancing modern life safety and building code standards with the protection of their historic architecture, fire safety remains critical—especially in densely packed historic districts. In the summer of 2024, in collaboration with Downtown Frederick Partnership, Preservation Maryland completed the Fire Suppression Survey Project. Focusing on buildings located in Frederick's downtown area, the project analyzed several buildings that recently underwent a fire suppression system installation and recommends public incentives for encouraging property owners to upgrade their buildings.

## Understanding the Need

Fire suppression systems are essential for protecting lives, preserving historic structures, and supporting local economies. In buildings with limited exit points, sprinklers or other fire suppression elements help control fires, and give occupants time to escape safely. In the wake of high-profile fires like Notre Dame, fire safety is also key in preventing loss of valuable buildings. For downtowns across Maryland, historic buildings define their character, identity, and economic vibrancy.

Downtown Frederick is home to more than 250 independently owned businesses, a growing residential community, and attracts more than one million visitors annually. Recently, Downtown Frederick was impacted by three significant fires, resulting in damage to six buildings and utilizing extensive public safety resources. As an example, in February 2024, a massive fire engulfed a historic building that took over 100 fire fighters to extinguish. The building has yet to be repaired, resulting in continued negative impacts to the neighboring businesses.

R: Downtown Frederick skyline.

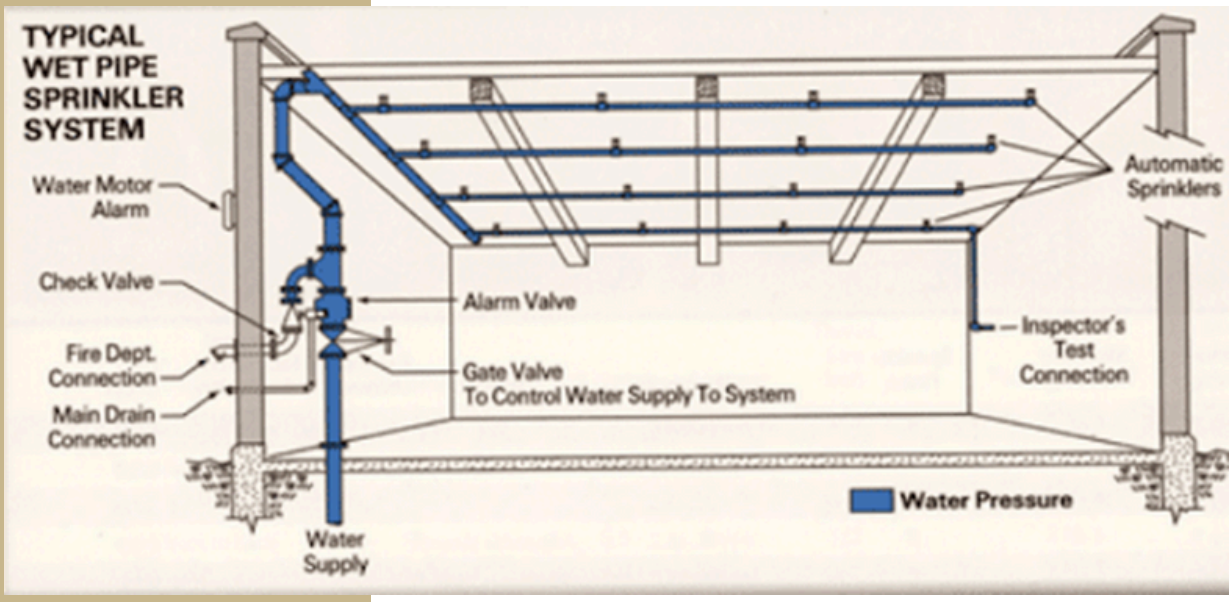
Furthermore, historic buildings in downtown areas can be underutilized because they lack modern fire protection, limiting their potential for higher occupancy and use. The installation of fire suppression systems can open new opportunities for use, from retail space to upper-floor apartments or event venues, which in turn can attract more visitors and increase local economic activity. Less than 15% of Downtown Frederick's commercial and mixed-used buildings have fire suppression systems. As municipalities look for answers to the housing crisis, upgrading vacant upper stories is a key method for incremental development and a recognized Smart Growth solution.


L: A multi-story mixed-used building in Downtown Frederick.

# Sprinkler Suppression System

Fire suppression systems are essential tools designed to manage, control, or extinguish fires, aiming to prevent their growth and spread. These systems can be triggered by various conditions such as heat, smoke, or a combination of both. Among the different types of fire suppression systems, wet pipe sprinkler systems are the most widely used.

The National Fire Protection Association (NFPA) defines a wet pipe system as a fixed piping network that instantly releases water when sprinklers are activated by heat from a fire. In wet pipe sprinkler systems, the pipes are continuously filled with pressurized water to ensure immediate water discharge through the sprinkler heads during a fire. To maintain a constant water supply within the pipes, a secure connection to the water source is essential. The water flows from the supply source, through the water main, and into the underground piping, which connects to a gate valve. The gate valve allows the water supply to the sprinkler system to be shut off for maintenance or emergencies. From there, riser pipes distribute the water to a network of branch piping throughout the building, with all pipes constantly filled with water, ready to be released through the sprinkler heads.




Typical Wet Pipe Sprinkler System. Smithsonian Magazine, 2021.

# The Cost of Safety & Public Programs

A key challenge is the extensive cost for installing fire suppression systems. The costs of installing sprinkler system piping in the subject building is usually the largest cost consideration in the upgrade. Additionally, the underground public infrastructure – i.e. water mains and laterals – must have the capacity to deliver the required amount of water to the building. If not, then upgrades must be undertaken that require excavation and sidewalk and road repairs.

In response to these challenges, a number of Maryland communities, including Allegany County and the City of Frostburg, Annapolis, Cumerland, Hagerstown, and Montgomery County, offer financial incentives to assist with the installation of fire suppression systems. These incentives are designed to reduce the financial burden on property owners who invest in fire safety measures, by offering tax credits, grants, or other financial assistance. By doing so, these communities aim to enhance public safety, protect property, and reduce the risk and impact of fires, particularly in historic or high-risk areas.

### Cumberland

The City of Cumberland recently stepped up with a large public investment to enhance their downtown, for the benefit of the community and building owners. The Baltimore Street Access project introduced one-way vehicular traffic on Baltimore Street, accompanied by a comprehensive streetscape renovation, and needed utility upgrades. To encourage the installation of sprinkler systems, and encourage upper floor use, the City offered building owners the opportunity to have their waterlines replaced at no cost. Most property owners accepted the offer and completed the waterline upgrade. The transformative project upgraded the existing water main to allow for 6-inch sprinkler taps to promote upper story housing and lower story redevelopment of commercial spaces. The project began in March 2023, with a budget of $15 million, with numerous local, state, and federal funding sources.

The streetscape reopened in November 2024. The Baltimore Street Access project is a great example of the public investment required to open opportunities for fire suppression systems, greater utility of upper floors, and maximize downtown economic vitality.

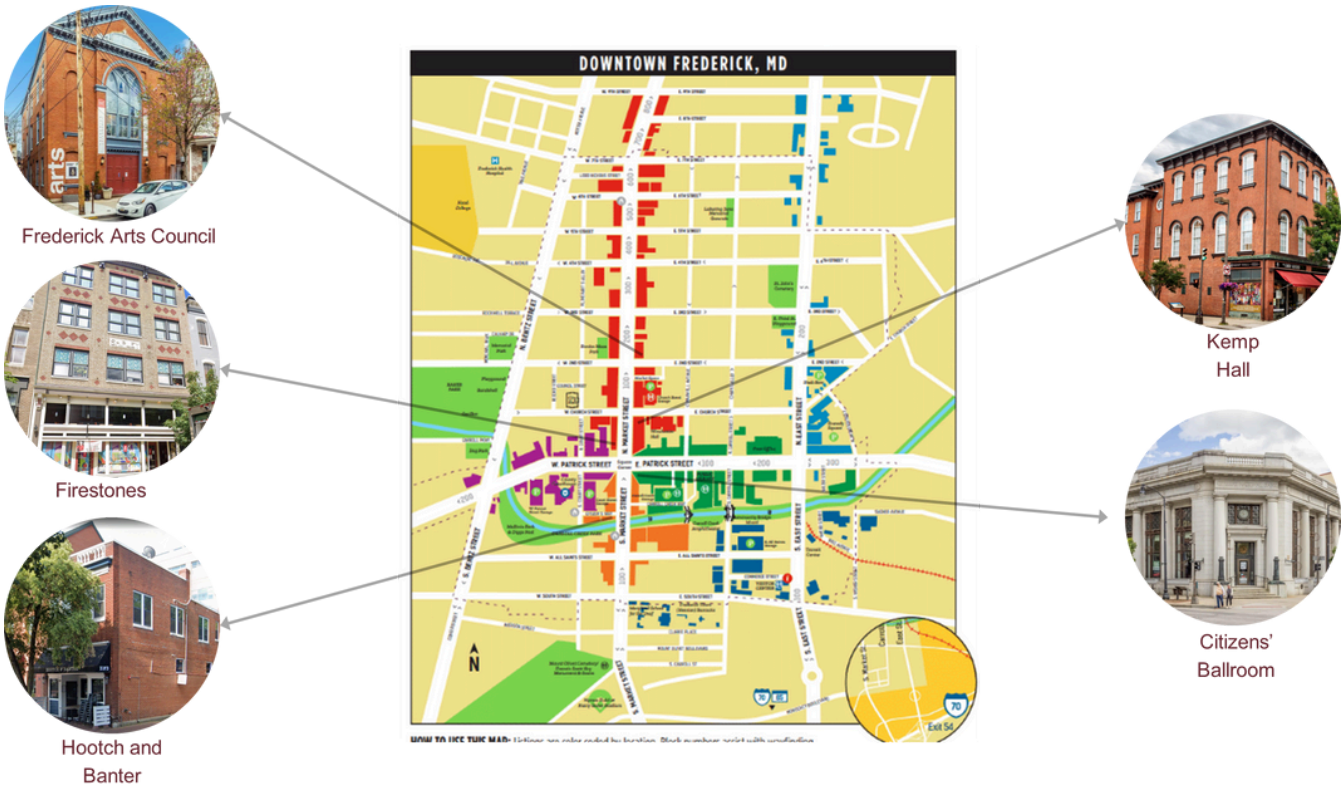
R: Reopening of Baltimore Street in Cumberland. Photo by Downtown Hagerstown.

## Frederick

Fire safety is of particular concern in Downtown Frederick given the typical wood-frame construction and density of buildings found downtown. In response, Downtown Frederick Partnership launched a fire suppression incentive that offers a maximum grant of $25,000 for the expenses associated with installing a new sprinkler system. To date, the Partnership has provided grants to support 4 sprinkler systems. The grant program is funded with Community Legacy dollars and is an effort to begin to meet the new for more sprinkler systems.

## Case Studies: Insights from Downtown Frederick

In summer 2024, Preservation Maryland partnered with Downtown Frederick to dig deeper into the experiences of four recent buildings that were upgraded with fire suppression systems. The case studies encompass a range of architectural styles, sizes, uses, and whether they have sprinkler systems installed.




Top: Graphic by Downtown Frederick Partnership.

# 1. Kemp Hall (2 & 4 E. Church Street)


Built in 1830, this three-story brick building underwent a significant renovation in 2019, upgrading its retail spaces and adding apartments above. A new sprinkler system was installed, which required significant infrastructure upgrades, including a waterline upgrade from a 2-inch pipe to a 6-inch pipe. The project cost $132,000 total, with the sprinkler system piping making up the largest portion of costs.

## Costs

| | |
|---|---|
| Interior Sprinkler system Piping: | $85,000 |
| Water service upgrade: | $42,000 |
| Sidewalk & Street Excavation: | $7,000 |
| Total: | $132,000 |
| Project Completed: | 2019 |
| Est Building Size: | 19,233 sq. ft. |

## 2. Hootch and Banter Building (49 S. Market Street)


This 1895 building's renovation in 2017 included expanding the upper floor for additional dining space. To accommodate the increased occupancy, a sprinkler system was installed, alongside significant upgrades to the building's waterline. The cost of this project came to $70,000, illustrating the financial challenges many small business owners face when upgrading their buildings to meet fire safety codes.

### Costs

| | |
|---|---|
| Interior Sprinkler system Piping: | $48,000 |
| Water service upgrade: | $7,000 |
| Sidewalk & Street Excavation: | $15,000 |
| Total: | $70,000 |
| Project Completed: | 2017 |
| Est Building Size: | 4,140 sq. ft. |

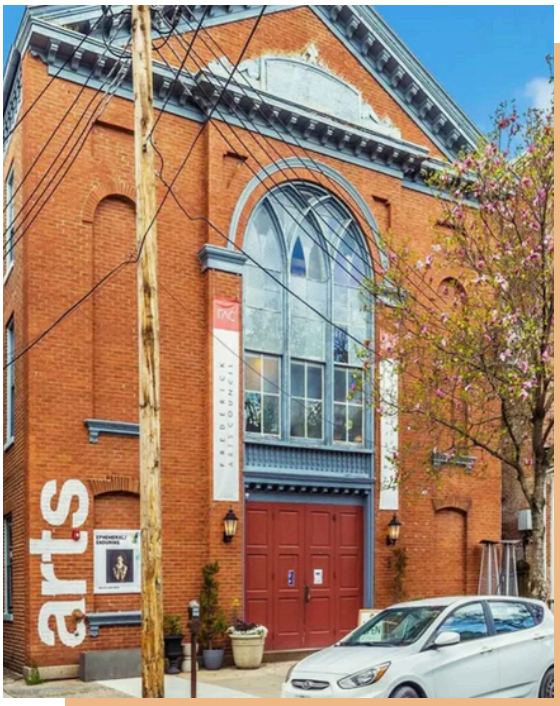
# 3. Citizens Ballroom (2 E. Patrick Street)


Once home to the Citizens National Bank, this 1908 building was converted into an event venue in 2022 to accommodate 200-300 attendees. The sprinkler system installation, which cost approximately $181,000, presented challenges due to the building's unique design and the need for extensive coordination among contractors. The project highlights how historic buildings often require creative solutions to meet modern safety standards.

**Costs**

| | |
|---|---|
| Interior Sprinkler system Piping: | $58,000 |
| Water service upgrade: | $24,478 |
| Sidewalk & Street Excavation: | $52,000 |
| Total: | $181,000 |
| Project Completed: | 2022 |
| Est Building Size: | 9,852 sq. ft. |

# 4. The Frederick Center (5 E. Second Street)



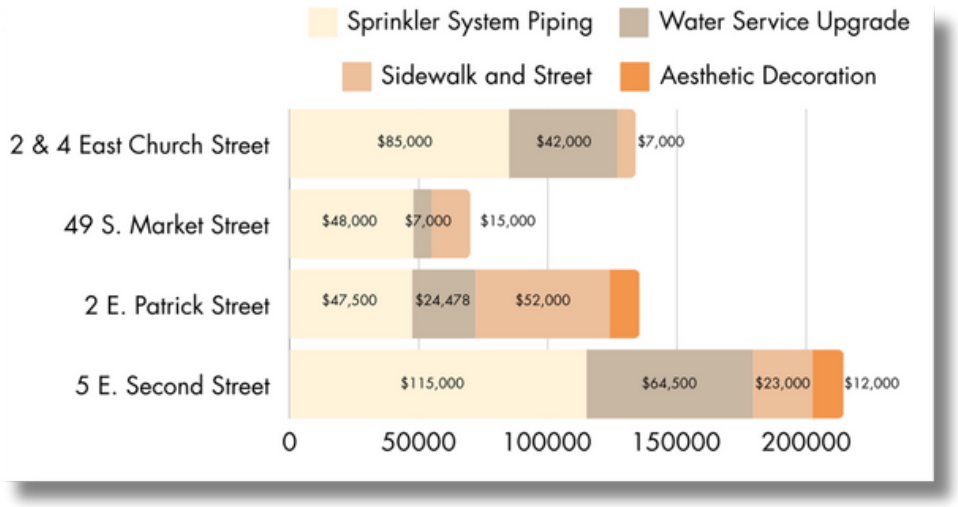

Originally built as a church in 1871, this building underwent a sprinkler system installation in 2022 to improve safety for large gatherings. The project, which cost around $214,500, faced numerous delays due to the building's high ceilings and unique layout, underscoring the complexity of retrofitting historic buildings with modern fire safety features.

**Costs**

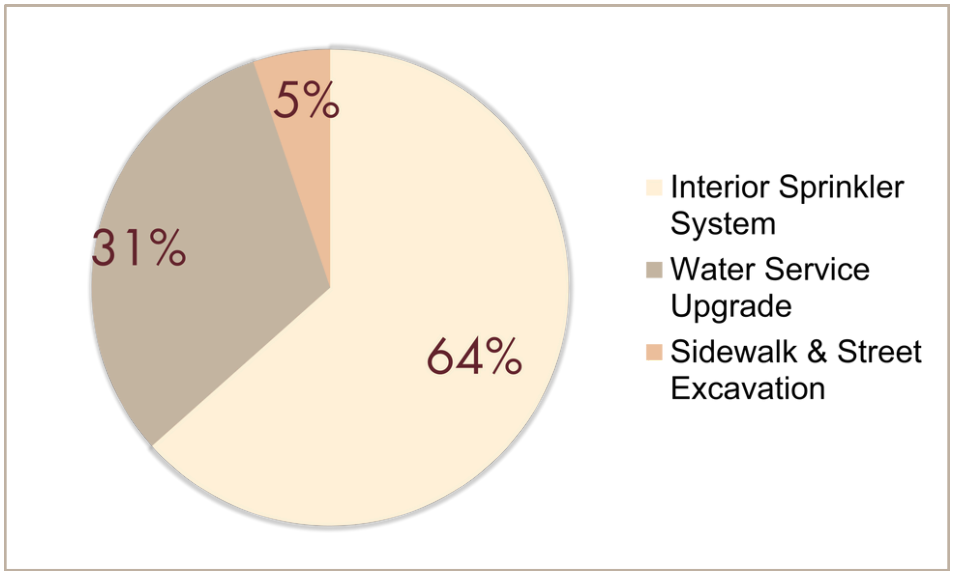
| | |
|---|---|
| Interior Sprinkler system Piping: | $127,000 |
| Water service upgrade: | $64,500 |
| Sidewalk & Street Excavation: | $23,000 |
| Total: | $214,000 |
| Project Completed: | 2022 |
| Est Building Size: | 9,405 sq. ft. |

## Analysis of the Frederick Projects

As illustrated by the four case studies, the cost of installing fire suppression systems in historic buildings is significant, typically exceeding $100,000. These costs can place a heavy burden on small business owners or property owners who may lack the financial resources to undertake such substantial investments – especially when upfront improvement costs may take years to recoup through rental income. Therefore, the use of local fire suppression incentive grants or public investment is crucial in ensuring that fire safety is accessible to all property owners.




Breakdown of cost division for elements of the fire suppression installation per building.




The interior sprinkler system was the largest cost portion of fire suppression systems.

Top: Sprinkler piping inside 2 E. Patrick Street. Bottom: Interior vacant upper floors of 105 N Market Street.

Another property, 105 N Market Street that was fire damaged in 2012 explored sprinkler installation but ultimately decided not to proceed due to the high costs and barriers for safe egress for potential upper floor apartments. While Maryland statutes (Title 9.2.9-232) allow the governing body or municipality to enact a tax credit against property taxes for installation of fire protection systems, this provision in isolation is insufficient for many property owners to make the significant investment necessary for fire protection systems.

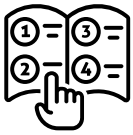
The recent passed House Bill 489 during the 2025 Maryland General Assembly, requiring the Maryland Department of Labor to study building code requirements for single-staircase buildings is a step in the right direction to helping reduce barriers to multi-family housing in downtown historic buildings. The combination of financial incentives and removing regulatory barriers can result in significant economic and community benefits to historic downtowns.

# Recommendations for the Future

Based on the experiences shared in the case studies, there are several recommendations to make fire suppression systems more accessible for communities across Maryland:

### Establish State and County-Level Funds

Creating dedicated state-level and county-level funds for upgrading public infrastructure would open opportunities for more fully utilizing downtown Main Street buildings, especially upper floors that may be vacant.



### Provide Clear Guidance on Regulatory Requirements

Many property owners and business owners face challenges navigating the regulatory landscape when installing fire suppression systems. Offering more resources and guidance on building codes and necessary steps for installation could help streamline the process and reduce confusion.

### Expand Financial Incentives for Private Investment

Building on successful programs like the fire suppression incentive in Downtown Frederick, more communities should consider offering financial assistance to property owners who invest in fire safety measures. This could include expanding grant programs, offering tax credits, or providing direct financial support for waterline upgrades and sprinkler installations as enabled by state legislation.

# Conclusion

Protecting historic buildings with fire suppression systems is not only a matter of safety but also one of cultural preservation and economic development. While the costs of installation can be significant, the benefits—both in terms of life safety and the preservation of heritage buildings—are invaluable. With targeted financial incentives and improved coordination between governments, property owners, and fire safety experts, more historic buildings can be retrofitted with modern fire suppression systems, ensuring that these cherished structures remain safe, functional, and vital parts of the community for generations to come.

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