

## **Fire Hydrants and Water Mains of Savannah**

Urban fires devastated American cities throughout the eighteenth and nineteenth centuries. The City of Savannah alone suffered seven major fires between 1796 and 1889, as well as many smaller fires in the area. In 1820, Savannah suffered the worst urban fire in the United States up to that point—a fire that destroyed more than half of the city. Such occurrences led to the development and use of water main and fire hydrant systems.

Water mains have existed in some form or another since ancient Roman times where aqueducts were built to carry fresh water through the city. Americans first used wooden water mains. Trees would be cut down and a hole would be bored through the center to create a hollow log that would then be buried beneath the ground and carry water through the city in a low-pressure system, or a water system that did not pump the water through the mains, but instead flowed freely. As cast iron became a prominent material during the nineteenth century, municipalities switched out the wooden mains for new cast iron ones.

Prior to the invention of the hydrant firefighters would use fireplugs. When a fire broke out, the men would dig down to the wooden water main and bore a hole, allowing water through. From there they could then syphon the water to their hand-pumped engines. After the fire was put out, the hole would be closed with a wooden plug, and the firefighters would mark it in case another fire broke out nearby.

The fire hydrant was first invented in 1803 in Philadelphia, Pennsylvania, by Frederick Graff, Sr. Graff's hydrant was a cast iron pipe fitted into a wooden main, providing above ground access to the water flowing through the mains. In some cases wooden boxes surround the pipes to protect them from damage or tampering. By 1811, Philadelphia had an extensive system of wooden and cast iron hydrants. In 1816, New York City began installing fire hydrants. Savannah did not start placing a hydrant system until at least 1830, but the exact date remains uncertain. The fire hydrant as we know it today was invented in the 1850s and quickly spread across the country.

The following information regarding the water mains and fire hydrants in the City of Savannah, Georgia is focused on the nineteenth century—when there was extensive work done to lay a system for fire protection. The idea for a fire hydrant system in Savannah began as early as 1827; however, most information regarding this system stems from the second half of the nineteenth century, from approximately 1854 on.

### **May 25, 1827 (Savannah Georgian, pg. 2)**

“Report” by John Martineau. This newspaper article lays out a proposed plan for the laying of water mains and installation of fire hydrants in Savannah. Martineau not only proposes where the water mains will be placed throughout the city, but also provides an estimated cost of \$100,000 to initially lay the system and \$10,000 annually to maintain it. Martineau also offers to supply the capital and complete the work if the plan is approved.

### **May 4, 1854 (Savannah City Code)**

Ordinances passed prohibiting the opening of fire hydrants without permission from the Committee on Water or the occurrence of fire, prohibiting the connection with any pipe or

reservoir, prohibiting the turning off or on of the water in the pipes, and prohibiting and destruction or defacing of the hydrants, with a penalty of fines between &10 and \$100.

**1866-1880 (Water Committee Papers, 0115-001-393A, Box #WAT 1)**

A series of petitions sent to City Council between 1860 and 1880, then referred to the Committee on Water, requesting the extension of water mains for fire protection reasons, as well as the placement of hydrants, pumps, or fire plugs. These petitions are in no particular order and they are mixed in with petitions requesting wells to be dug and pumps to be placed for drinking water.

**1875-1900 City of Savannah Mayor's Annual Report (Digital Library of Georgia)**

Although the Water Works Department was established in 1854, the first specific mention of fire hydrants mentioned in the Annual Reports is in 1875. Some years are more detailed than other years, but each year the Water Works Department reported on the condition of water mains and fire hydrants in the City of Savannah and how many new hydrants were added to the system or how many were replaced due to damage. The 1895 Annual Report specifically provides a table of every hydrant located in Savannah during that year, including its location and even the manufacturer of the hydrant.

**1884 Sanborn Fire Insurance Map (Digital Library of Georgia)**

The 1884 Sanborn Fire Insurance Maps detail information relevant to fire protection in the City of Savannah. The maps show fire hydrants indicated by blue dots on the map and the abbreviation "Hyd," as well as the water mains placed throughout the city.

**February 12, 1884 (City Council Meeting Papers, Contracts, 0115-002-18 Box #CON 2)**

A contract between the City of Savannah (Mayor and Alderman of Savannah) and Thomas Houlihan to lay 16 inch, 12 inch, and 10 inch water mains throughout the city. The contract details the location of the pipes and the cost of the project.

**1888 Sanborn Fire Insurance Map (Digital Library of Georgia)**

The 1888 Sanborn Fire Insurance Map shows the fire hydrants and water mains present in the City of Savannah at the time the map was made. The hydrants are symbolized by black dots with the abbreviation "D.H." which stands for double hydrant. The water mains are represented with dotted lines through the streets and are labeled with the size of the pipe.

**September 4, 1891 (City Council Meeting Papers, Contracts, 0115-002-20 Box #CON 4)**

A contract between the city of Savannah and Howard Harrison Iron Company for the supply of cast iron pipes and specials for water mains. The contract details the agreement between the City and Howard Harrison Iron Company for the cost and delivery of the pipes and specials.

**May 1894 (City Council Meeting Papers, Contracts, 0115-002-22 Box #CON 6)**

A contract between the City of Savannah and D.G. Purse for the laying of water mains along Gwinnett Street, totally 2,600 feet. A plan for the installation of a six-inch water main and eight fire hydrants was agreed upon. The pipe would produce a standard pressure of 200 pounds and the cost for the project totaled \$1,685.

**January 10, 1896 (3121-008 Engineering Department Retrospective Maps – East/West Maps, EW/E-372)**

A map of the north half of Lathrop Ward. The map shows artesian wells as well as the water mains that are supplied by those wells. It also shows the locations of free fire hydrants and fire plugs in the ward.

**1906 (5600EN-090 Engineering Maps, Volume 1)**

This book of maps provides several different infrastructure systems in Savannah from 1906. One map specifically shows the water mains, fire hydrants, and stop gates that were installed in the City of Savannah in 1906.

**Bibliography:**

Sources on the History of Firefighting

Cannon, Donald J. *Heritage of Flames: The Illustrated History of Early American Firefighting*. New York: Doubleday, 1977.

Donald Cannon has put together a history of early American firefighting where he looks at how Colonial Americans and early citizens, often volunteer firefighters, fought fires. This book provides a broader context of the beginning of firefighting in America and how it slowly began to change with creation of new tools and resources. Although the book does not directly discuss fire hydrants, it is helpful in establishing a context for the early changes in firefighting that led to the development of the fire hydrant as we know it today.

Greenberg, Amy S. *Cause for Alarm: The Volunteer Fire Department in the Nineteenth Century City*. Princeton: Princeton University Press, 2014.

Greenberg focuses on the social and cultural aspects of urban firefighting in St. Louis, Missouri; Baltimore, Maryland; and San Francisco, California during the eighteenth and nineteenth centuries. Although she places her argument within urban areas of the country and does discuss the history of firefighting, her main point is about the brotherhood volunteer firefighting created in these areas between men of different social classes—working men and merchants, native-borns and immigrants. Greenberg also discusses the municipalization of the fire department through many changes that took place during the nineteenth century. This is useful due to the brief discussion of the spreading of fire insurance and the changing technologies of firefighting, both of which were impacted by the availability and use of fire hydrants.

Smith, Dennis. *Dennis Smith's History of Firefighting in America: 300 Years of Courage*. New York: Doubleday, 1980.

This book is a collection of notable fires throughout the United States that helped spark change in building codes to make buildings safer for those who use them. Although the primary focus of the book is the different disasters throughout history, the author does discuss the shifts in firefighting throughout the years—advents of technology that made firefighting easier, more efficient, and safer. This book does not discuss the fire hydrant directly, but Smith does look at the motorization of the fire department and the shift from bucket brigades to fire engines, which would have needed fire hydrants to be successfully used. This source is useful in understanding

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the broader context of nineteenth-century firefighting in America and how the fire hydrant fits into the process of stopping the flames from spreading.

Sources on the History of Fire Hydrants

Firehydrant.org. <http://www.firehydrant.org>. Accessed April 16, 2015.

This website provides images and a brief history of fire hydrants. The main focus is providing information regarding the collection of antique fire hydrants and where they can be found in the United States, but the website also provides a brief history of the fire hydrant from the bucket brigade to modern fire hydrants. There is also a link to the R.D. Wood & Co. Catalog from 1877, where pages have been reproduced that discuss the fire hydrant, the company's design for the hydrant, and problems associated with fire hydrants, such as freezing. This page also has two detailed images of how fire hydrants work and labeled parts about the fire hydrant. Although the sources of information on the history of fire hydrants are not provided, and it is obvious that this website was started by an amateur enthusiast for fire hydrants, the information appears to be correct, as verified through other sources. The website is helpful in creating a timeline for the history of fire hydrants, especially in the United States.

Wohleber, Curt. "The Fire Hydrant." *American Heritage of Invention & Technology* 17, no. 3 (Winter 2002): 10-11.

This brief article discusses the history of the fire hydrant, from the beginning of bucket brigades, to fireplugs, and through to present-day fire hydrants. The author highlights the fact that hydrants have not changed much in design since the mid-nineteenth century. This article provides good insight into where to explore for additional sources related to fire hydrants, from the water main system put in place in the 1600s to the first fire hydrant in the United States, credited to the City of Philadelphia. Although it does not go very in depth about the hydrant, the brief overview the article does provide is useful in creating a timeline of fire hydrant history.

Sources on Waterworks Infrastructure

Smith, Carl S. *City Water, City Life: Water and the Infrastructure of Ideas in Urbanizing Philadelphia, Boston, and Chicago*. Chicago: Chicago University Press, 2013.

This book discusses the urbanization of Philadelphia, Boston, and Chicago through the waterworks infrastructure put in place. The author's main argument is about the work the cities did to bring fresh water to the area and through the streets for citizens. Carl Smith argues that a city is more than the political and social institutions and the layout of the streets and buildings; it is also the infrastructure of the beliefs, values, and aspirations of the people who created the city. He looks at this idea through the creation of the first successful waterworks systems in America. This source is useful because waterworks systems and pressurized water mains are necessary for the installation and use of fire hydrants. Without the water main systems, fire fighters would not have easy access to water all over the city to put fires out.

Other Sources:

Hooper, T. N. "Notes on Fire Protection," *Journal of the American Water Works Association* 3, No. 1 (March 1916): 239-241.

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Maguire, John E. *Historical souvenir: Savannah Fire Department*. Savannah: Fireman's Relief Fund Association, 1906.

Troesken, Werner, and Rick Geddes, "Municipalizing American Waterworks, 1897-1915," *Journal of Law, Economics, & Organization* 19, No. 2 (Oct., 2003): 373-400.