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Quick, Timely Reads
On the Waterfront

Big Bertha *Last Vestige of Erie's Steam Legacy*

By David Frew
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Erie Water Works bayfront campus

I absolutely love the Bayfront Parkway. A leisurely ride down the road that has opened to reveal Erie's greatest asset, its waterfront, is always a joy. It represents a trip down memory lane and into the secret world once only seen and appreciated by Bay Rats. Decades before the parkway emerged, the same thoroughfare could have been designated "Bay Rat Lane." It was a private path mostly used by us kids and the most popular route from our northwest neighborhood to any of the 1950s attractions downtown, including the Public Dock (Dobbins Landing). It was cluttered, dirty, and industrial but so were we.

These days it is difficult to imagine just how ugly the now-beautiful bayfront once was. Rows of rusted railroad cars, clouds of coal dust, nasty industrial operations, filthy disease-infested water and general rusty disorder have all been replaced by green grass, attractive shrubbery, yacht clubs, restaurants, marinas, and condominiums. An area that was once an embarrassing scourge has been transformed into the jewel of the city.

Erie was not unique in ignoring its waterfront. Many eastern cities, fearing the often-incurable disease and filth that once characterized shipping and sailors during the era before the development of antibiotics, did the same. But Erie was faster to recognize its waterfront potential and shift its aesthetics than many other cities. That good fortune may have been driven by the fact that the Erie-Western Pennsylvania Port Authority was in control of much of the waterfront property. It was clearly inspired by the creation of the Bayfront Parkway.

Of all the “improvements” along the bayfront, the most visually stunning is the restoration of Erie’s waterworks, a compound that has graced the shore of Presque Isle Bay for more than a century. The entire building compound was originally built of very high-quality red brick and, between 2000 and 2002 when the buildings were modernized and restored, it made architectural sense to bring them back to better than their original condition. The 2000-2003 restoration was completed as a contribution to the aesthetics of Erie’s new Bayfront Parkway.

Today’s Erie Water Works (Erie City Water Authority) campus is much more accessible than it was during the 1950s. Since it was an industrial style operation, and not open to the public, the only way practical to reach it was to follow unimproved construction roads that led from either the east or the west. There was a circuitous road leading down the bluffs from Front Street but that entryway had been developed as an infrastructure for the original public park (Waterworks Park) that once included the Chestnut Street Pool, picnic grounds, and the original Erie Yacht Club when it was located just east of the old Water Department. But that old road with its steep switchbacks had deteriorated by the 1950s and was removed.



The original Waterworks Park with the pool in the background

These days the Bayfront Parkway guides motorists through the previously inaccessible center of the original waterworks compound. It splits the campus into the familiar northern buildings, which include administrative offices where customers can visit to pay bills or ask questions, and the more mysterious buildings on the south side of the compound.



The building that houses Big Bertha

From a historical perspective, the large building on the south side of the Parkway may be the most significant of the waterworks structures. The tall, red brick building that stands within a few feet of the south side of the road contains Big Bertha, the huge triple expansion steam engine that was installed in 1910. Safer and more efficient than its predecessors, the triple expansion engines ran at lower temperatures and used much less coal. They revolutionized ocean travel after being installed in the ships that were regularly crossing the Atlantic Ocean. Triple-expansion steam engines also became the propulsion hardware of choice for Great Lakes transport ships, dominating the lakes until the 1930s and 1940s. In fact, the last steam-driven Great Lakes ship, Algoma's *Montrealais*, continued until the

1974 season. Several American passenger ferries with steam engines continued well beyond that. Montrealais and other steamers visited Erie regularly and often wintered here for annual winter layovers, which included engine repair as well as maintenance.



Algoma's Montrealais, the last Canadian steam-driven ship, continued working on the Great Lakes until 1974.

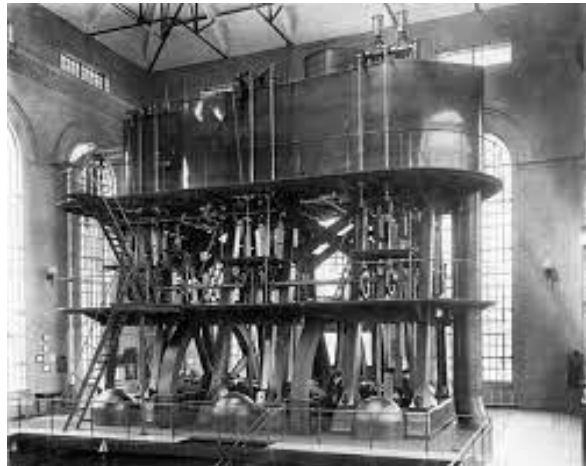
By the turn of the 20th century, triple-expansion steam engines had also become the choice for pumping the water that was provided by municipal water systems. It was unusual for a city the size of Erie to have powered its supply system with an engine as large as Big Bertha but the population was growing rapidly, and planners were projecting regional water requirements well into the future. Big Bertha was capable of pumping 20-million gallons of water per day.

At the time of its installation, Erie was in the midst of a commercial fishing boom. The city was regularly referred to as the “Freshwater Fishing Capital of the World.” In addition to the huge steam engines that were powering local industry, almost all of the fish tugs in the harbor were driven by small steam engines. Given the size of the local fleet, a number that ranged between 100 and 150 for more than a decade, there was a constant need for steam engine mechanics. As a result, the installation, maintenance and repair of steam engines became a major local industry. There were literally hundreds of steam engine technicians as well as boilermakers working in the region. Each steam engine required a companion boiler. That phenomenon has led some observers to suggest that a better title for Erie might have been the “Steam Engine and Boiler Capital of the World.” It has been argued that the famous “boilermaker” bar drink (a shot and a beer) originated in Erie.

Every imaginable secondary and tertiary mechanical skill was required to support the engines that powered Erie's industrial and fishing economies. It was the mechanical and machine-working infrastructure in Erie that supported the

development of Titusville's developing petroleum industry and its extraction pumps. It was the local availability of machining, boiler-making and steam talent that convinced General Electric Company to bring its steam locomotive division (Transportation) to Erie in 1910.

Between the first and second world wars, steam engines were gradually replaced by direct electric motors in stationary applications and by diesel engines in small boats such as fish tugs. Diesels were more reliable and more efficient. They also eliminated boilers as well as the problems of stockpiling, feeding, and burning coal. There was one notable exception. During the early years of World War II, the liberty ships that were built in the United States were originally powered by coal-fired steam engines. That specification was driven by the legendary reliability of triple expansion engines as well as the ready availability of coal in England. Before the run of Liberty Ship construction had been completed, however, American engineers had replaced old-style steam engines.



Big Bertha

Big Bertha continues as a reminder of those glory days of steam. The venerable Erie Water Works steam engine was replaced by smaller and more efficient electric motors but as a homage to the glory days when she stood guard on the waterfront, Big Bertha has been restored and converted to a museum piece. The coal house and boiler, which were housed in a smaller building next door, have been eliminated but thankfully Big Bertha is still with us. These days Big Bertha can be powered and run by electricity and episodically Erie Water Works demonstrates the operation of its beautiful antique engine. These demonstrations should not be missed.

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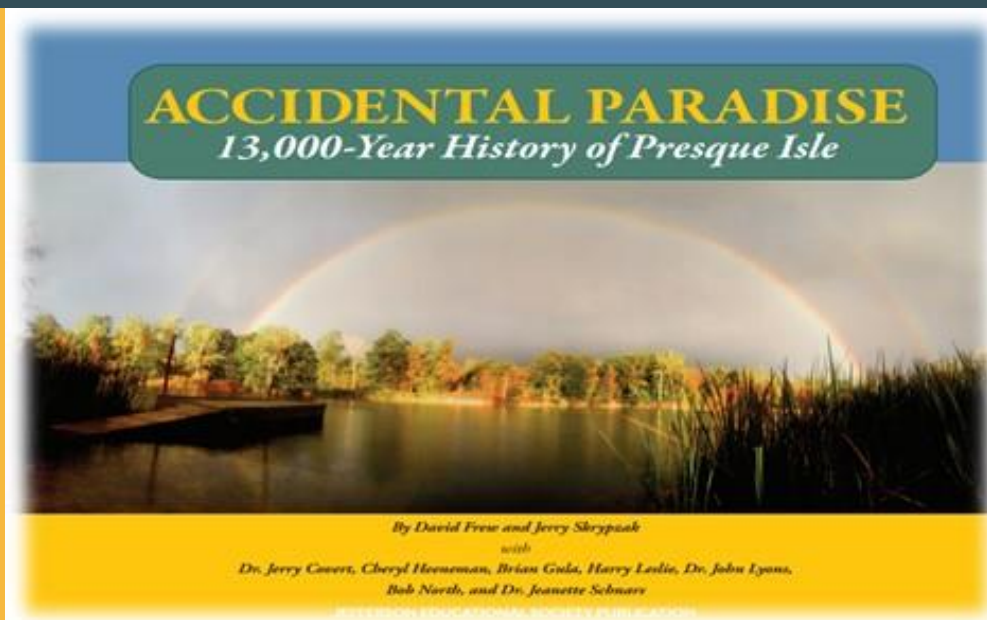
Longtime Waterworks board member Dan Bensur provided many of the details for this article.

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Accidental Paradise
by Dr. David Frew and Jerry Skrypzak



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The book, priced at **\$35 plus tax and shipping**, can be ordered now through the website sponsored by the TREC Foundation, AccidentalParadise.com.

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For more information, send an email to aperino@TREC.org.

To watch "Accidental Paradise: Stories Behind The Stories" click [here](#).

ABOUT THE AUTHOR

Historian and author David Frew, Ph.D., is a Scholar-in-Residence at the JES. An emeritus professor at Gannon University, he held a variety of administrative positions during a 33-year career. He is also emeritus director of the Erie County Historical Society/Hagen History Center and is president of his own management consulting business. Frew has written or co-written 35 books and more than 100 articles, cases, and papers.



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