

## The Milanville Bridge – from 1901 to 2017



November 6, 2016 – looking toward New York from Milton Skinner's home and barn in Pennsylvania. In 1900 Skinner formed a corporation that paved the way for building this bridge.



A weathered plaque at the Milanville Bridge honors local men whose dream it became, and the craftsmen who built it.

# A Bridge for Milanville

## The Upper Delaware River at Milanville

The view from Pennsylvania (below) looks toward Skinners Falls, a set of rocky ledges and boulders where NY and PA hills pinch together at the base of this pool. Ice covers two quiet eddies. The Milanville Bridge is just upstream, where Milton and Volney Skinner ran a busy ferry in the 1890s.

In 1764 Daniel Skinner, Milton's great-grandfather, pinned together six pine logs, mounted a steering oar, and set off from here to sell them at Philadelphia shipyards - inventing a river-based timber industry that lasted 150 years.

Rafting in spring to markets in Trenton and Philadelphia, he and others used freshets caused by melted snow to run tricky pools and rapids: from Cochecton Falls upstream (now Skinners Falls), to Otter Eddy and Foul Rift farther south.



Looking toward Skinner Falls, hidden behind trees on the far right. Daniel Skinner and other men assembled timber rafts on this pool as soon as winter ice was gone,

## A \$14,000 Investment



Looking upriver from the PA shore in the early 20th century, a company toll house on the left.

At the close of the 19th century heavy ferry traffic to and from New York's Erie Railroad across the river prompted Milton Skinner to seek a permanent connection to the Erie by forming the Milanville Bridge Company.

In 1901 company directors hired New York City's American Bridge Company to build a 470' steel bridge at the ferry crossing, tendering \$14,000 for a job completed in November, 1902.

Later, as a unit of Andrew Carnegie's U.S. Steel Corporation, American Bridge built New York Harbor's famous Verrazano-Narrows Bridge and some of the world's most challenging suspension and truss bridges.

Milanville's 1901 bridge is a rare handiwork, still in use, that dates from the company's beginning.

## Milanville's Timber Industry

During an early career as a sailor, Daniel Skinner saw a need for tall, straight trees to build masts for sailing ships. Settling near present-day Milanville he found ideal stands of white pines and in 1764 solved the problem of getting them to urban shipyards and sawmills.



A log raft near Hancock NY, the steersman at right. Boys in front were heading to nearby towns. (Courtesy of Colchester NY Historical Society).

Milanville's timber industry diversified after 1850 to supply its new tannery with tons of hemlock bark (ca. 1849 – 1880). The business of tanning leather for household and industrial uses earned Eli Beach & Son \$116,829 in 1869, equal to \$1,969,060 in 2016 dollars. But when hemlock forests disappeared in the 1880s the tannery was abandoned.

In 1898 W.S. Brandt, who became a bridge company director, began an acid factory at the tannery site, distilling chemicals such as wood alcohol from hardwood trees. To distill products for the U.S. munitions industry in World War I they burned 21 hardwood cords a day. Ironically, synthetic chemicals developed by German laboratories during the war spelled an end to Upper Delaware acid factories.

## "Rafting Rock"



In this view, which repeats one on the first page, Skinners Falls lies around a bend at top right. "Rafting Rock" is at top left.

From Skinners Falls (then called Cohecton Falls) it took Daniel Skinner eight days to reach Philadelphia in 1764, and two weeks to walk home. But his raft, built of six 80' pine logs, sold for \$120 in gold!

In 1828, when grandson Calvin was rafting logs, *Hazard's Register of Pennsylvania* estimated a thousand timber rafts "ran" the river – their volume "equal to fifty million board feet of lumber." And the traffic tripled by mid-century.

**Ironmen**, as steersmen were called, gauged water levels at Skinners Falls by checking the giant boulder at upper left. If spring freshets topped this "rafting rock" the coast was clear. If it got *too* high they'd tie up in a Milanville eddy and wait.

## Opening Doors

In 1882 the brothers Milton and Volney Skinner built a sawmill upstream from powerful rapids at Skinners Falls. Sawdust fired a boiler that powered saws whose peak capacity was 10,000 board feet a day.

After the bridge opened in 1902 wagons with lumber and milk cans rattled across to an Erie Railroad siding, along with chemicals distilled from hardwood trees at Milanville's acid factory.



An early 20th-century view of the Skinners' sawmill, with lumber stacked in the right foreground. An original fieldstone pier at mid-river still supports both spans of the bridge. The Skinners sold their sawmill in 1905 and a new owner dismantled it in 1918. (Courtesy of Lorraine McGrath.)



Looking toward the Milanville Bridge, whose NY portal is behind a tree in the left center. A crossing signal marks the former road bed of the Erie Railroad, maintained today by a local, short-line railroad.

**Erie Railroad work crews** reached the Delaware River Valley at Port Jervis, NY, in December, 1847 and were soon laying track in our region.

During World War I chemicals distilled at Milanville's acid factory were in high demand for making explosives. In 1917, this and other heavy traffic led a NY court to order the Erie to build a station and depot near the bridge. "Skinners Falls" became the name of the station, and of a settlement that grew there.

# Floods and Ice Jams



The picture above shows a February, 1945 ice jam that clogged the river at Narrowsburg, five miles below, and nearly reached the deck of the Milanville Bridge.

A photographer who looked across from NY wrote below his photograph: *“February 1945 ice lies 8 feet from the base of Milanville Bridge.”* The picture, minus frame, hangs on a back wall of the Milanville General Store.

**Ice jams are common** on the Upper Delaware River, and occasionally like one that pummeled Skinners Falls in March 1904. Driven by flood waters, a giant ice sheet wrenched away the NY bridge span until both ran aground at the falls. (The Milanville Bridge was reopened seven months later.



A view of the Milanville Bridge (below) from a NY parking lot during a “100-year flood” that crested on September 18, 2004. Six and a half months later an April flood rose higher, snatching a car from a nearby campground (above).

At Cochecton, three miles upriver, historic floods and ice jams have destroyed four bridges since 1820, the last one in 1902.

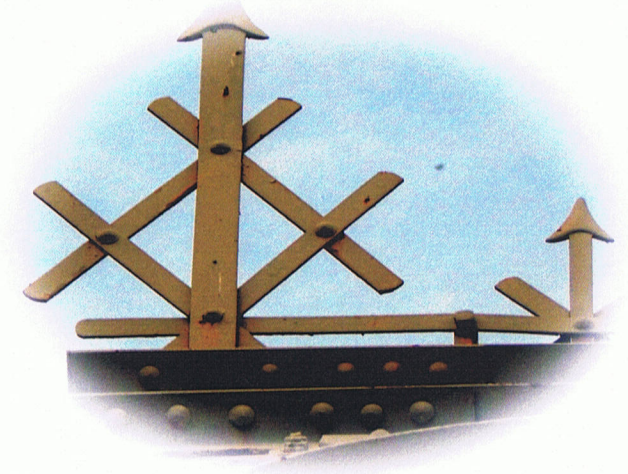


In the picture floodwaters are ebbing after they crested close to the bridge deck.

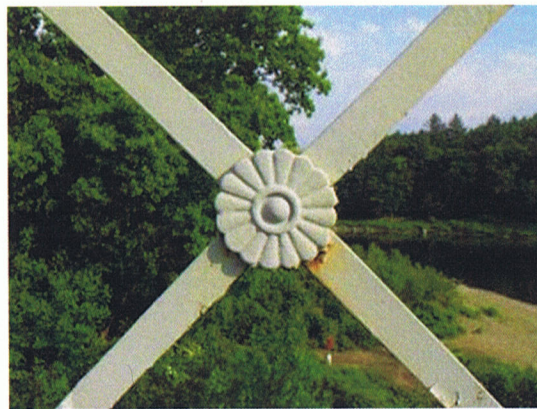
# The Artistry of 1901 Bridge Builders



Decorative crests on NY and PA portals.



A corner crest in summer light.

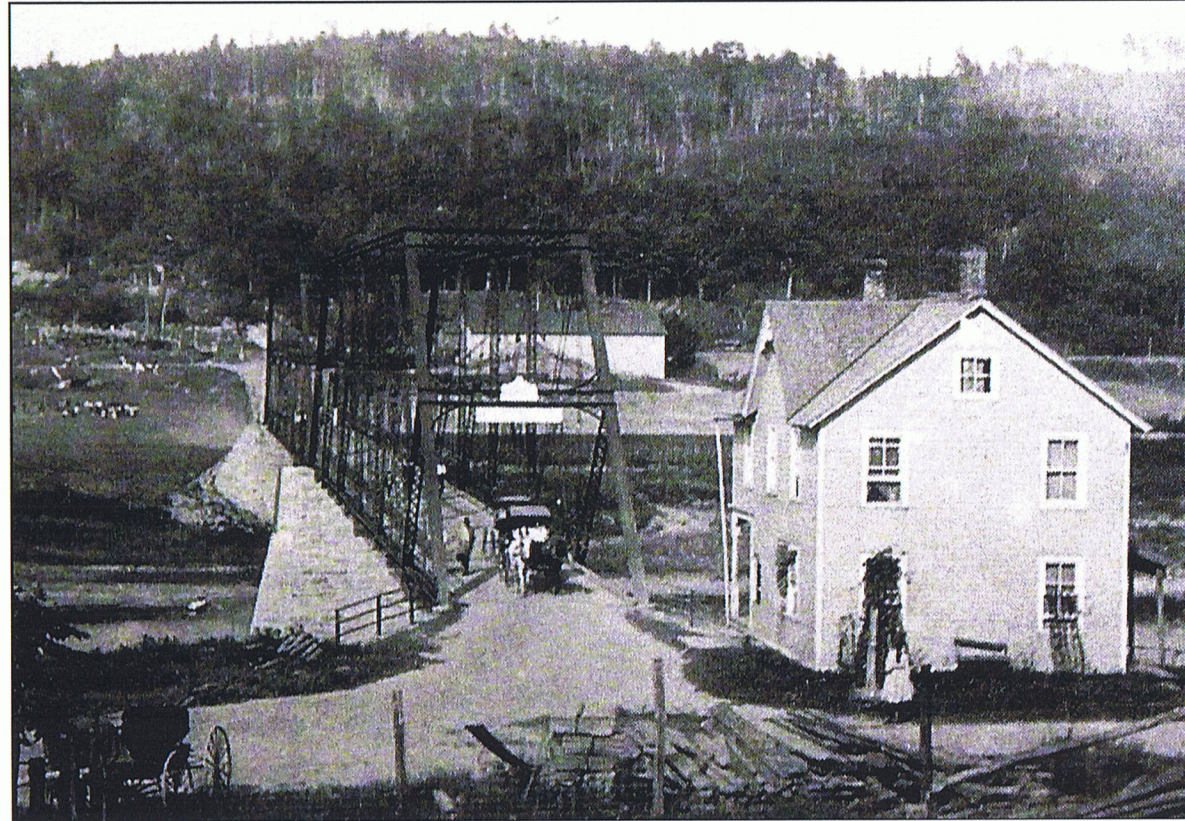


Flower motifs on bridge railings.



Struts and trusses.

## A Team and Carriage Entering Milanville – Undated Photograph



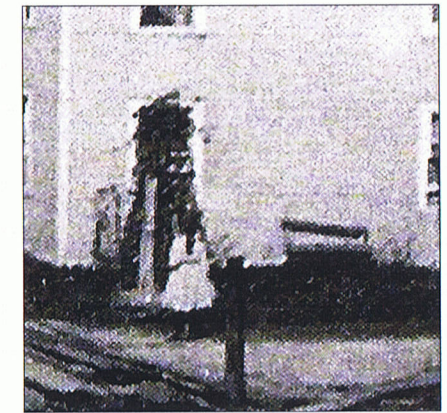
I can't resist adding this photograph from Barbara Davis Dexter's book *Around Damascus Township*, with its picture credit to Helen Dexter, Milanville's tireless historian.

It's especially for readers who remember horse-drawn teams. Or for "bad boys" (now "elders") who may have dipped a pigtail into an elementary school inkwell. "Zooming" with a computer adds detail in the right-hand pictures.

A long rectangular building on the New York side (seen through bridge trusses) is an Erie Railroad milk station, built during World War 1. The bridge gave Milanville farmers and dairymen daily access to New York City markets.



A two-horse carriage and driver— a white horse on the left, a dark one on the right.



A young girl in a white dress at the near side of the toll house. Note her pigtail.



# What's a Baltimore Truss?

In a "Truss" bridge elements of the framework connect to make triangular units. By adding triangles engineers increase strength and load distribution – the goal of a Baltimore Truss.

Baltimore and Ohio (B&O) railroaders tinkered with this design in the 1870s, and American Bridge Company engineers adapted it for use at Milanville in 1901–02. (Both Truss diagrams are courtesy of Wikipedia)

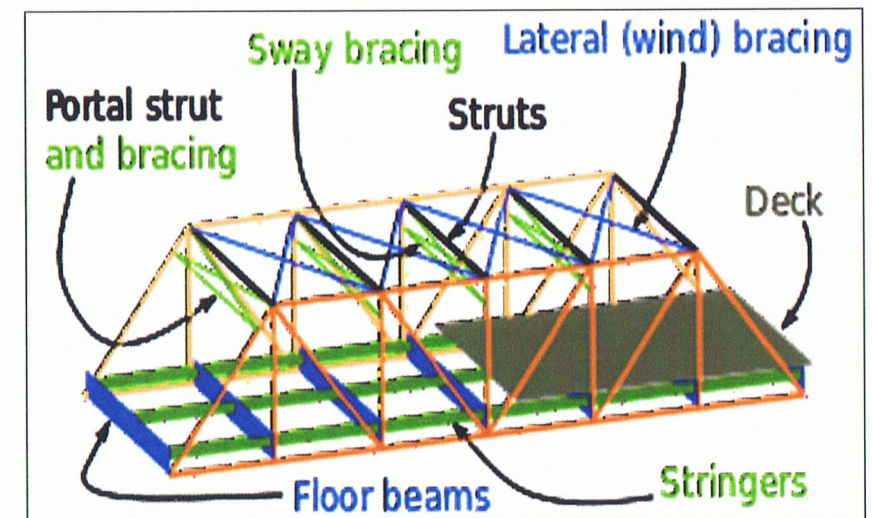


The diagram (left) has many triangles large and small: an engineering strategy that spreads a load to large areas. A truss bridge is economical to build because it uses materials efficiently.

(diagrams courtesy of Wikipedia)



Note the triangles in our 2004 flood picture.



# Maintaining the Milanville Bridge



The Milanville Bridge, from a hill 1/2 mile upriver.

## RECENT CLOSINGS

**January, 2010:** PennDot funded emergency repairs at the PA bridge portal.

**December 2012:** PennDOT closed the bridge when inspectors deemed it unsafe. Repairs were made and the load capacity reduced to 4 tons.

**December 16, 2015 – November 2016:** On 12/15 PennDOT announced it would close the Milanville Bridge “indefinitely.” This sparked a petition drive by Vanessa DeGori at her Milanville store that by July had enrolled about 2000 bridge supporters . In late summer repairs began that permitted PennDOT to reopen the bridge on November 10. Overhead bars at each end will enforce a ban on heavy trucks and limit loads to 4 tons.

## MAJOR RENOVATIONS

**March 26, 1904:** Ice-clogged floodwaters knocked the bridge’s New York span into the Delaware River. The Owego Bridge Company, hired in May for \$7000, replaced the span and reopened the bridge that autumn.

**1986–1987:** The PA Department of Transportation (PennDOT) made extensive repairs to floor beams and stringers. According to bridge historian Frank Dale: “Floor beams and trusses were replaced, new guide rails constructed, and the whole bridge repainted” – without destroying its historic fabric.

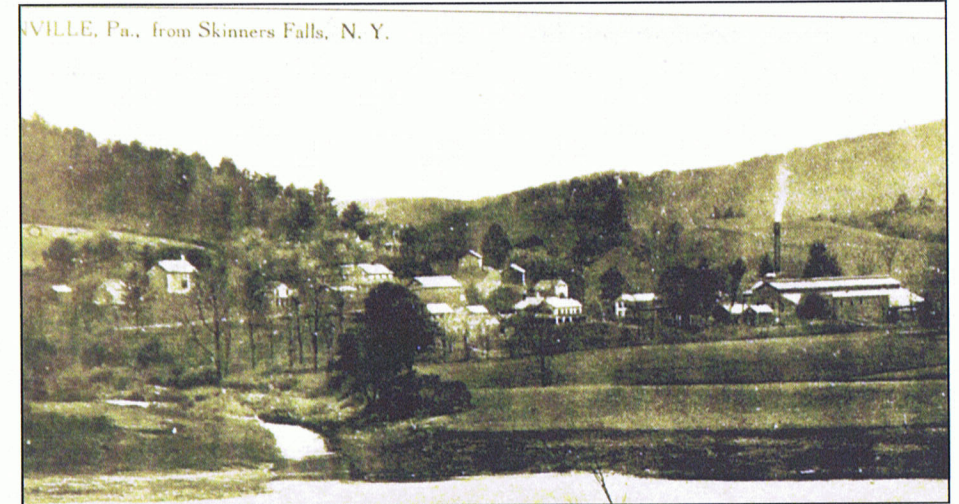


Workmen at the bridge in January 2010. Despite frigid conditions they soon finished the job. Note ice on the Delaware River.

# 19th-Century Milanville



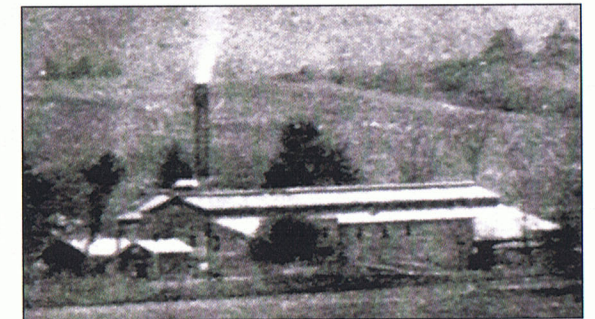
Calkins Creek enters the River at the right.  
 The Eli Beach tannery is at far left.  
 Volney Skinner's home / hotel is left center, at a major road junction. The same roads carry modern traffic.  
 Eli Beach lived just north of the road junction.



A 1900 postcard view of Milanville, from NY. (Courtesy of Lorraine McGrath)  
 A white ribbon across the bottom is snow.  
 A dark ribbon above it, with filaments of ice, is the Delaware River.  
 Frozen ice, like a white tongue, is at the mouth of Calkins Creek.  
 A smoke plume, far right, marks the acid factory.



A Delaware River ferry. The Skinners probably ran a similar, but larger "scow" at Milanville - with room for passengers and a couple of wagons. The ferryman (front) lowers a "dropboard" at the landing place. Ropes attached the scows to overhead cables secured at each shore. By angling the bow upstream a ferrymen let the river's current push him across.  
 (Courtesy of Elizabeth Lotterer)



In 1900 our present Milanville General Store was then a "company store" on this side of the acid factory. The store is identified by a shubby evergreen in front.

# Milanville's Historic District

Milanville's Historic District was placed on the U.S. National Register of Historic Places in 1988. Its 14 listed structures include nine homes and the Milanville Bridge. Five listed properties are below.



Milanville General Store, c. 1850



Methodist Church, 1910



Volney Skinner's "Milanville House."  
Built c. 1840, enlarged in 1864



Milton Skinner House near bridge, c. 1900



Milanville School House, c. 1880



**NOT LISTED.** This mid-20th century Milanville house is a Resource Management center for the National Park Service. Staff biologists monitor the health of the Upper Delaware National Scenic River – from water quality, to bald eagles and cliff swallows (which nest beneath the bridge deck).

# Bridge Notes (1)

**Owner (1901—1928):** the Milanville Bridge Company, chartered by PA and NY in 1900 to construct a Delaware River toll bridge at Milanville.

**Current owner:** the “New York–Pennsylvania Joint Interstate Bridge Commission,” formed in the 1920s to purchase 10 private toll bridges on the Upper Delaware River and to operate them toll free. In 1928 the Commission bought the Milanville Bridge for \$19,542.22. PennDOT maintains five of the ten bridges, including Milanville’s.

**Construction:** Work began in 1901 and was completed in November, 1902.

**Cost (in 1901 dollars):** \$14,000.

**Builder:** The American Bridge Company of NYC, owned by world-famous financier J.P. Morgan. In 1902 American Bridge was acquired by Andrew Carnegie’s United States Steel Corporation.

**Design:** Steel, with twin Baltimore Truss spans supporting a one-lane road.

**Length:** 470 feet

**National Recognition:** The Milanville Bridge is listed on the *U.S. National Register of Historic Places* and on the *National Register of Historic Bridges*. It is a vital part of the *Milanville Historic District*.



Looking toward Milanville. The Skinner sawmill was on a shelf above the river, about 300’ left of the bridge.

## A Sample of Tolls & Toll Income – Milanville Bridge Co.

One pedestrian (one way)	3 cents
Horse and carriage (one way)	15 cents
Horse and wagon (round trip)	35 cents
One sheep	2 cents
Clergymen	free
Earnings from tolls (1911)	\$1,254.59

(toll for one carriage = \$4.03 in 2016 dollars)  
(1911 earnings from tolls = \$33,742 in 2016 dollars)

## Bridge Notes (2)

To fill a few gaps I've added sidebars about local bridges, rafting, and ice jams. Thick ice at Narrowsburg, "home grown" or swept-in, has been a lasting concern of Upper Delaware bridge planners.

### *(1) Why does Milanville have a one-lane bridge?*

When Milanville sought bridge charters from PA and NY legislatures, bridge owners at Narrowsburg (five miles down) and Cochection (3 miles up) foresaw big drops in toll revenues. It's likely, say historians, that lawyers struck a deal when Milanville agreed to a one-lane bridge.

### *(2) What was the biggest timber raft on the Delaware River?*

According to Delaware Valley historian Frank Dale, "In 1861 Bill Parks...captained a timber leviathan 60' wide and 190' long that contained more than 120,000 board feet of lumber." During the voyage he and his 12-man crew took aboard 3500 railroad ties.

### *(3) When did a final timber raft navigate the Delaware?*

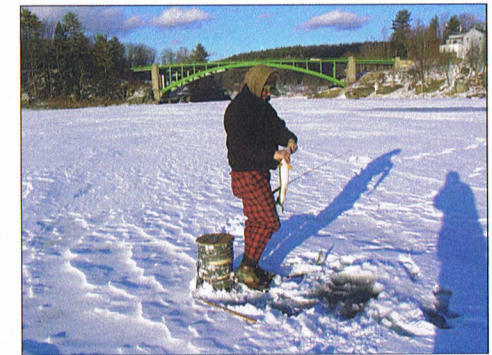
Frank Dale writes that decades of heavy logging had depleted available forests, and "by 1905 timber rafts were a rarity...In 1917, during World War I, a single raft appeared on the river, traveling to Bordentown [NJ] with logs to be used on pilings."

### *Did Upper Delaware communities build wooden covered bridges?*

Yes - steel was decades away. At Cochection, just above Milanville, the town's first five bridges were made of wood and were covered: (1) In 1817 the Cochection Bridge Company financed a 550' bridge that collapsed a year later. (2) A devastating 1846 flood smashed a replacement. (3) An 1848 flood smashed bridge number 3. (4) In February, 1857 an ice jam flood claimed number 4. (5) A final covered bridge survived until 1902, when a flood swept away most of the village.



A 19th-century ice jam at Narrowsburg's covered bridge, looking downriver.



Looking upriver on 3/3/06, when two feet of ice covered Narrowsburg's Big Eddy. The town's 1953 bridge is in the distance.



Remnants of a Narrowsburg ice jam. Looking downriver, 3/19/03.

# The Future...

It was reassuring on November 12 to observe traffic on the Milanville Bridge, and a “Super Moon” reflected from the Delaware River – the moon’s closest approach to Earth since 1947. But a prominent rust stain on a bridge girder reminds us that PennDOT’s 2016 repairs are stop-gap.

Pretty soon the Agency must choose: (1) to rehabilitate our historic bridge for the long term; (2) to build a new bridge here; or (3) after the Milanville Bridge wears down, to leave NO viable bridge.

A clue to their recent thinking may lie 35 miles downriver at Pond Eddy, PA where PennDOT and the Federal Highway Administration are replacing an historic 1904 truss bridge with a new one that’s under construction.

Historic preservation organizations believe that cards were stacked from the start *against* restoring the 1904 bridge, and three of them refused to sign a “Memorandum of Agreement” to approve a new bridge: The National Trust for Historic Preservation, The Historic Bridge Foundation, and Friends of Pond Eddy.

New York’s Historic Preservation Office also rebuked PennDOT, writing that *“Demolition of the historic resource was a foregone conclusion and all efforts were directed at demolishing the [1904] bridge.”*

As an addendum, the U.S. President’s Council on Historic Preservation reports it was asked to intervene in nine contemporary PennDOT projects by “citizens concerned about the demolition of small, locally significant bridges.”

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**A personal note:** PennDOT and the Federal Highway Administration are spending about \$17 million at Pond Eddy to replace an existing 1904 bridge that carries “light” traffic between PA and Route 97 in NY. Their new bridge will have a 35-ton load capacity. The so-called PA “community” they will “serve” consists of a few scattered cabins in the woods and several houses.

In Milanville, meanwhile, we have a vibrant community with roots in colonial America – with 14 homes and structures (including our bridge) listed on the National Register of Historic Places. The National Park Service also maintains a Resource Management office in town for managing the ecology of the Upper Delaware National Scenic and Recreational River.

The Milanville Bridge fits hand and glove into this remarkable setting, Treasured by residents and visitors, it would be tragic to close it for good. It must be preserved for present and future generations.