

Headquarters Road Bridge – A National Treasure

Headquarters Road Bridge is Unique & Irreplaceable

- Built in 1812
- 10th oldest bridge in Pennsylvania
- Oldest known surviving example of once common wooden deck multispan pier to pier structure
- Irreplaceable part of a unique historic collection representing every kind of waterway crossing from the ford to modern day – if Headquarters Road bridge is lost, this collection, unique to Bucks County and likely the nation, is destroyed.

See [Kutztown University Professor Rob Reynolds Categorical Exclusion Comment](#)





A Problem With A Solution – All That’s Missing is Leadership

- Headquarters Road Bridge has been closed to traffic since 2011 – by PADOT’s choice.
- All agree the bridge needs to be reopened as soon as possible, but it is not on a track to achieve that.
- What’s the local opinion? While some prioritize history and environment, and some are singly focused on transportation, the **community demand is for an open bridge** regardless of the number of lanes.
- The quickest way to reopen is to repair or rehabilitate, as PennDOT just did with the very similar Golden Pheasant Bridge on River Road in Tinicum. So far, PennDOT hasn’t been willing to consider rehabilitation of the 1812 Headquarters Road bridge.
- 2005 PennDOT made the determination and commitment, with the political support of state representative McIlhinney, to secure demolition and replacement (not repair).* This early determination seems to be inhibiting a modern reconsideration of the value and importance of preserving our nation’s history.
- The 2005 decision was before any studies had been done, before the general public had been notified or consulted, before local government or the community had a chance to comment as required by law. PennDOT had no idea of the long, distinguished and unique history of the bridge, its relation to the historic district, or the environmental issues.

At Stake: Our Historic Bridge & Our Protected Community

A one-lane Headquarters Road Bridge fits the context of our community and honors the dedicated commitment of our community to preserve our historic, rural and environmental character.

Little has changed in the 200 years since the bridge was built, including the roads and the creek itself -- giving ecotourists and historic enthusiasts visiting the area a unique and real-time experience of what the area was like in the historic past. With the bridge rehabilitated Tinicum and Bucks County have a unique marketing opportunity to bring attention and visitors to enjoy and spend in our community.

- Tinicum Twp is a town of one-lane bridges – 2/3 of all bridges and ½ of PennDOT bridges are one lane and fit the local transportation routes.
- The township is characterized by narrow, winding country roads (including gravel roads and fords!) appropriate for the rural nature of the area.
- Regional (Delaware Valley Regional Planning Commission), county, and township plans **all** call for conservation.
- More than 1/3 of the township is already preserved open space and little development pressure is forecast by DVRPC .



Precious Resources

“Our most basic common link is that we all inhabit this planet. We all breathe the same air. We all cherish our children’s future.”

—JOHN F. KENNEDY



Preserving Our Environment

CONGRESSMAN MIKE FITZPATRICK



Michael Fitzpatrick
M.C.

PRSRT STD

UNITED STATES
HOUSE OF REPRESENTATIVES
WASHINGTON, DC 20515

Congressman Mike Fitzpatrick chose this view from the Headquarters Road bridge because of its iconic historic and environmental beauty and importance to the community.

Unique & Historic Character: Legally Recognized & Protected.

Headquarters Road bridge, the surrounding ground, creek, and buildings are all protected by acts of Congress and the US Dept of the Interior.

PennDOT’s demolition-replacement plan would cause serious permanent damage to these protected resources without any overall benefit in safety or utility.

- Tincum Creek is designated by Congress as a Federal Wild and Scenic River.
- Stretch of creek is within the Ridge Valley National Register Rural Historic district.
- The bridge and the farms on either side of it are listed on the National Register.
- Tincum Creek protected as an Exceptional Value stream by Commonwealth of PA

Three Potential Solutions

3 solutions that will allow us to reopen a safe and secure bridge in the near term, negate the need for the ongoing litigation, and protect historic and natural resources all at the same time:

- 1. Update the Stone Arch Bridge Program** to include other unique, historic, masonry structures, including Headquarters Road Bridge and others which are older than many of the stone arch bridges currently protected by this program;
- 2. Follow the Golden Pheasant Bridge Model** – declare the need for emergency repairs and rehabilitate Headquarters Road Bridge using a similar concept, i.e. new bridge deck on original masonry;
- 3. Put in place a temporary bridge** that covers the existing bridge while the debate rages on.

PennDOT Does Rehab One Lane Bridges, and It Can Do It Well. Expanding the Stone Arch Bridge program will showcase Pennsylvania's Irreplaceable Historic Bridges Built with Stone Masonry & PennDOT's rehabilitation skills.



PennDOT has successfully rehabilitated many one-lane bridges in Bucks County carrying far more traffic than the Headquarters Road bridge.

Projects done under the Stone Arch Bridge program show that PennDOT can sensitively and appropriately rehabilitate one-lane bridges.

Photos show one-lane bridges, located in Bucks County, recently rehabilitated by PennDOT under the Stone Arch Bridge Program. Most have higher traffic volumes than Headquarters Road Bridge.

Expanding this program to include a wider array of historic masonry structures will allow rehabilitation of Headquarters Road Bridge and avoid other similar debates.

Golden Pheasant Rehabilitation is a Good and Viable Model *For Headquarters Road Bridge*

- December 2018, PennDOT Completed Rehabilitation/Repair of the Golden Pheasant Bridge
- Repair needs for Golden Pheasant Bridge & Headquarters Road Bridge are similar



The Headquarters Road Bridge and the Golden Pheasant Bridge are so similar that the 2018 Golden Pheasant Rehab/Repair is an ideal model for Headquarters Road Bridge.



Picture: Golden Pheasant Bridge

Golden Pheasant Bridge and Headquarters Road Bridge have structural and location similarities that demonstrate the Golden Pheasant repair/rehabilitation approach used by PennDOT in 2018 is a good model for Headquarters Road Bridge that will deliver what both the community and the agency seek.

The Headquarters Road Bridge and the Golden Pheasant Bridge are similar in size, structure and physical setting.

The biggest difference is in use – the recently rehabbed Golden Pheasant bridge has a use that is more than 4 times that of Headquarters Road Bridge.

	Golden Pheasant	Headquarters Road
Crossing Lanes	16' single lane	16' single lane
Similar Masonry Substructure	Stone Masonry Stone Abutments (Not Stone Arch)	Stone Masonry Stone Abutments & Piers (Not Stone Arch)
Repair needs	Masonry substructure & Deck	Masonry substructure & Deck
Similar Physical Setting With Government Recognitions	Sensitive physical setting protected by Dept of Interior & recognized contributing element to the historic district	Sensitive physical setting protected by Dept of Interior & recognized contributing element to the historic district <i>-- EXCEPT, Headquarters is older, has been specifically recognized by DOI for its engineering significance, and has less traffic</i>
Similar Site/Setting	Golden pheasant has tight turn radii on both sides, steeper approach grade, at a minor traffic intersection.	Headquarters Road has similar turn radii but on one side only (making it less difficult), has a less steep approach grade, at a minor traffic intersection.
Similar vehicle use	2,132*	495*

*

<http://www.projects.penndot.gov/projects/BridgeConditionsMap.aspx>

Repair needs for Golden Pheasant Bridge & Headquarters Road Bridge are Similar



Golden Pheasant Bridge “Emergency Repairs” include extensive rehabilitation

As these and the following photos demonstrate:

- ✓ Golden Pheasant Bridge, like Headquarters Road Bridge, needed deck and substructure repairs.
- ✓ Masonry walls and structures at Golden Pheasant were completely rehabilitated by PennDOT using historic preservation engineering strategies.
- ✓ The same can be done at Headquarters Road Bridge.

Golden Pheasant Masonry Abutments are similar to Headquarters Road Bridge. PennDOT's repair entailed significant stonework.



During Rehabilitation/Repair, Golden Pheasant abutment interiors exposed



After wingwall rebuilt

Golden Pheasant Bridge abutment repair/rehab work was extensive



Golden Pheasant Bridge NW abutment and wing wall before:



And after:

PennDOT's repair work on the Golden Pheasant bridge included replacing the deck. The PennDOT design is essentially the same concept as the design recommended by historic experts for Headquarters Road Bridge:* using poured concrete caps on original stone masonry to support new steel stringers and distribute the deck loads into the stonework below.



Two views of Golden Pheasant Bridge rehabilitation

* See [January 12, 2017 Delaware Riverkeeper Network Draft Categorical Exclusion Evaluation Headquarters Road Bridge.](#)

Golden Pheasant and Headquarters Road bridge stone masonry is similar, needing similar repair work.

Stone Photos



Cracked and crushed stone in NW wingwall.



Cracked and crushed stone at Ottsville abutment.

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This structure inspection document is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

Above: Problem areas of stonework identified by PennDOT in their 2006 report on the Headquarters Road Bridge.



The stones in the abutments at Golden Pheasant Bridge have the same types of damage as found in the stones at the Headquarters Road Bridge abutments and piers.

As the photo above shows, cracked stones in the Golden Pheasant bridge are similar to Headquarters Road Bridge cracks. At the Golden Pheasant Bridge, these cracked stones were determined adequate and left in place to support the bridge deck.

Golden Pheasant Bridge Solution for Scour also an Option for Headquarters Road Bridge if the Need is Confirmed.

Although PennDOT has cited scour as a particular problem at the Headquarters Road bridge, only small holes were identified in the 2004 Biennial Report. In 200 years, there is no evidence that the bridge itself, which sits directly on bedrock, has sustained significant scour damage. However, installation of grout bags against the masonry just below the waterline ten years ago has dramatically increased turbulence at the bridge resulting in undermining of the grout bags and should be removed.

Scour concerns at Headquarters Road Bridge could be addressed by concrete encasement of the masonry below the water line down to the bedrock on which the piers and abutments sit. This photo shows a similar concrete apron, although extending above the waterline, in an old repair to the west abutment at the Golden Pheasant bridge.

In addition, the use of natural channel design principles could redirect and restore the stream flow to all 3 bridge spans, removing the direct pressure on the abutment while at the same time providing flow and habitat benefits to Tinicum Creek.



Doug Bond, Vice President of McMullan & Associates Engineers inspected the Golden Pheasant bridge after the emergency repair construction.



Bond found that the success of the Golden Pheasant restoration confirms that similar techniques are a good option for restoring Headquarters Road Bridge to safe, one-lane use.

Golden Pheasant Rehabilitation is a Good and Viable Model *For Headquarters Road Bridge*



Inspection by historic bridge expert confirms, PennDOT personnel and/or contractors have successfully restored the Golden Pheasant historic stonework, and used expertise and techniques similar/parallel to those needed to do repairs on the Headquarters Road Bridge, including maintaining the one-lane size.

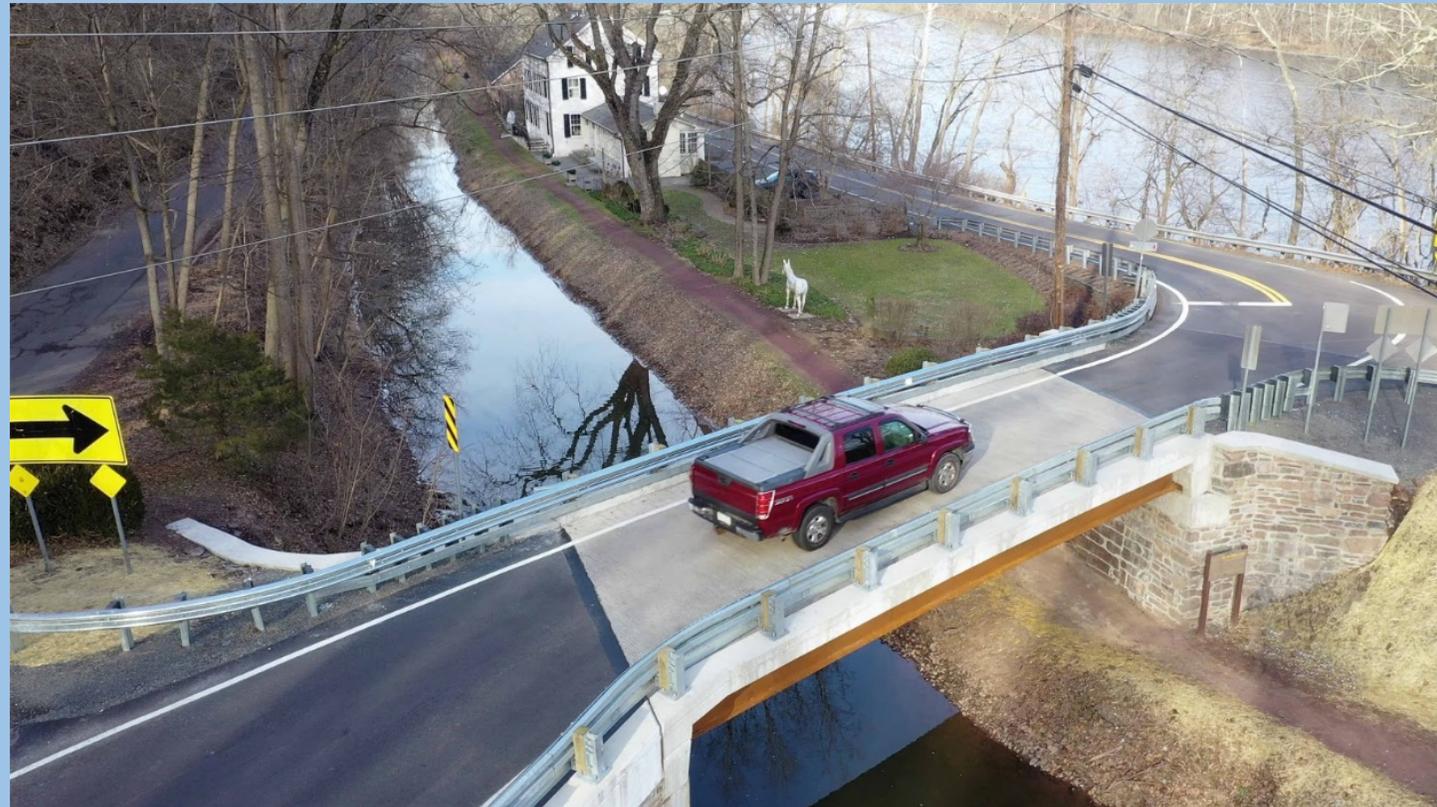


Current Demolition/Replacement Proposal for Headquarters Road Bridge: Purely Politics &/Or Simple Semantics

Penn DOT has designated the Golden Pheasant Bridge project as “emergency repairs”.

In exchange, it provided a historic rehabilitation of a one-lane bridge that honored the context sensitive setting.

The same could be done for Headquarters Road Bridge, providing a near term, safe, environmentally and historically protective crossing.



There is No Genuine Regulatory Obstacle; Problem is Purely Politics &/or Simple Semantics



PennDOT relies upon internal rules – particularly the Bridge Design Manual – to deny rehabilitation at the Headquarters Road bridge.

The Bridge Design Manual virtually forbids rehabbing one-lane bridges, BUT PennDOT has ways to rehab one-lane bridges when they choose to do so, including:

- A. Following the *Stone Arch Bridge Maintenance Manual*, which authorizes everything from repairs to reconstruction for one-lane stone arch bridges. The uniqueness of Headquarters Road Bridge -- including that it is the oldest known surviving example of this unique historical type -- could be used to justify its inclusion in the Stone Arch Bridge program.
- B. Calling a project “*emergency interim repairs*” in order to support near-term historic rehabilitation -- this strategy was used to rehab the historic, one-lane, Golden Pheasant bridge which, using this terminology, was substantially rebuilt by PennDOT in order to rehabilitate/repair the historic abutment masonry. The same approach could be used for Headquarters Road Bridge.
- C. In addition, the *use of state money* speeds up these projects and does NOT cause the loss of any federal funding.

If Stone Arch Bridge Program & Golden Pheasant Model Rejected, then Option 3:

A Temporary Bridge Is the Next Best Available, Economic & Near Term Option



- In 2018 Griffin Engineering determined a temporary bridge could be erected at the footprint of the current bridge in three months.
- Township officials have supported the temporary bridge idea in order to open up needed emergency services and to support community traffic and ecotourism.
- PADOT claims that permitting would prevent a temporary bridge option are not supported by the facts.
- A temporary bridge provides space for all parties agreeing to a successful solution.

Back to the Facts



One-Lane, Historic, Headquarters Road Bridge Has Well Served the Needs of our Community from Colonial to Historic Times.

PennDOT's Plans Provide No Travel Benefits But Make Our Community LESS SAFE.



Headquarters Road Bridge before it was closed – note the Jersey Barriers in place reducing the width.

Safety. Expert reviews have confirmed that the historic one-lane structure coupled with the geometric site constraints have provided traffic calming benefits to neighboring landowners and commuting traffic. In fact, according to experts, PennDOT's oversized bridge and roadway modifications will undermine the site's traffic calming benefits, creating a more dangerous travel situation.

Service. Even with its deck width shrunk from 16' to 10' by Jersey Barriers, the one-lane Headquarters Road Bridge well served the needs of our community -- accommodating, pedestrian, bike, car, truck and safety vehicles.

A Two-Lane Bridge Is Not Needed for Emergency Vehicles

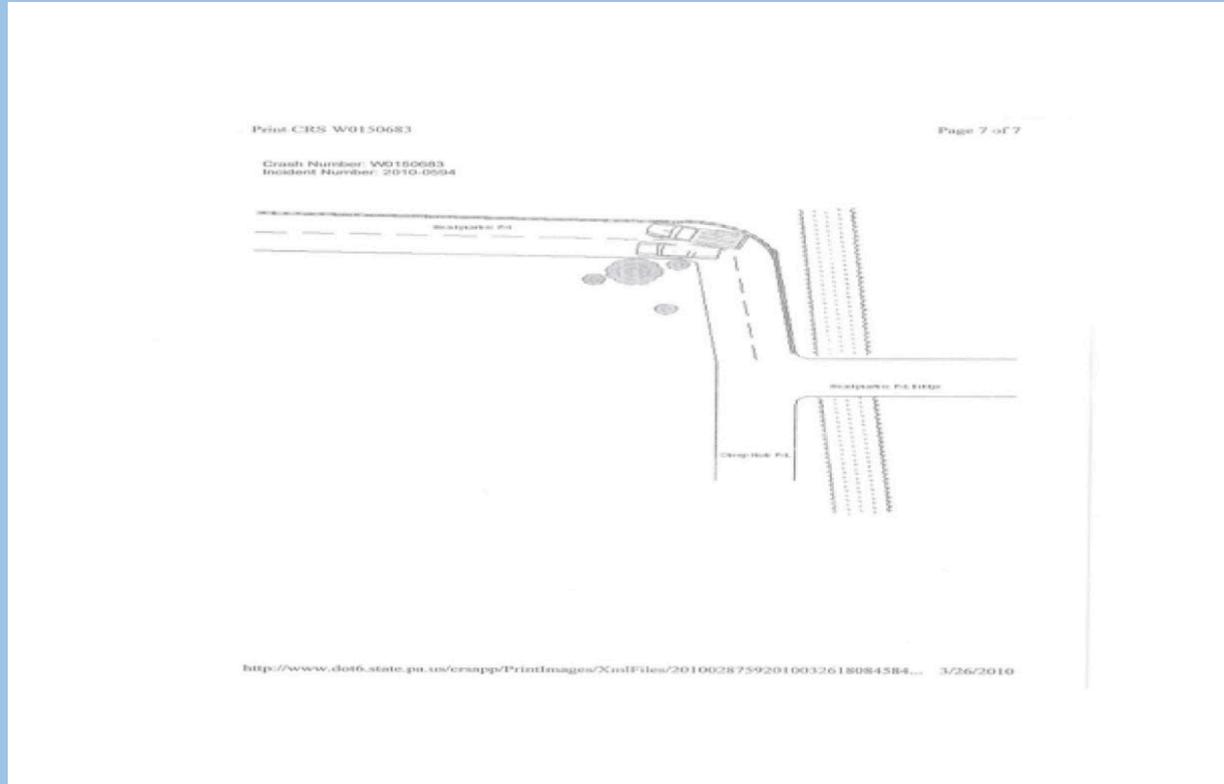
Fire trucks are able to use the historic bridge without an oversized replacement

All Tincum fire trucks, including the largest recently purchased ladder truck, are able to utilize a one-lane Headquarters Road Bridge. PennDOT's assertions to the contrary have been debunked by statements in public and on the record from the fire chief, Township officials, and the Township Roadmaster. All affirm that the largest fire truck would be able to make the turn with a one-lane bridge, at the current location, with the current geometry. Furthermore, additional improvements can be made to enhance turning ease without impeding historic preservation.

In fact, emergency vehicles and the town's largest fire truck were able to use the bridge without problem before it was closed, even after PennDOT narrowed the travel lane to ten feet with the Jersey Barriers.



There is no accident justification for the PennDOT proposal.



(Tinicum Township Police report sketch of 2010 accident on Headquarters Road east of the bridge)

PennDOT wrote a report asserting that accident records show an unusually high number of accidents at the Headquarters Road Bridge, thereby justifying the need for a two-lane structure. Police records prove this justification to be FALSE.*

The same accident records demonstrate that even after the addition of Jersey Barriers narrowing the travel lane to ten feet, NONE of the accidents were caused by the bridge itself -- not its size, not its location, not its geometry. In fact, most of the accidents PennDOT cited actually happened at the curve just to the east*, not on the bridge, and not in a section of roadway that PennDOT is planning to even touch as part of this project.

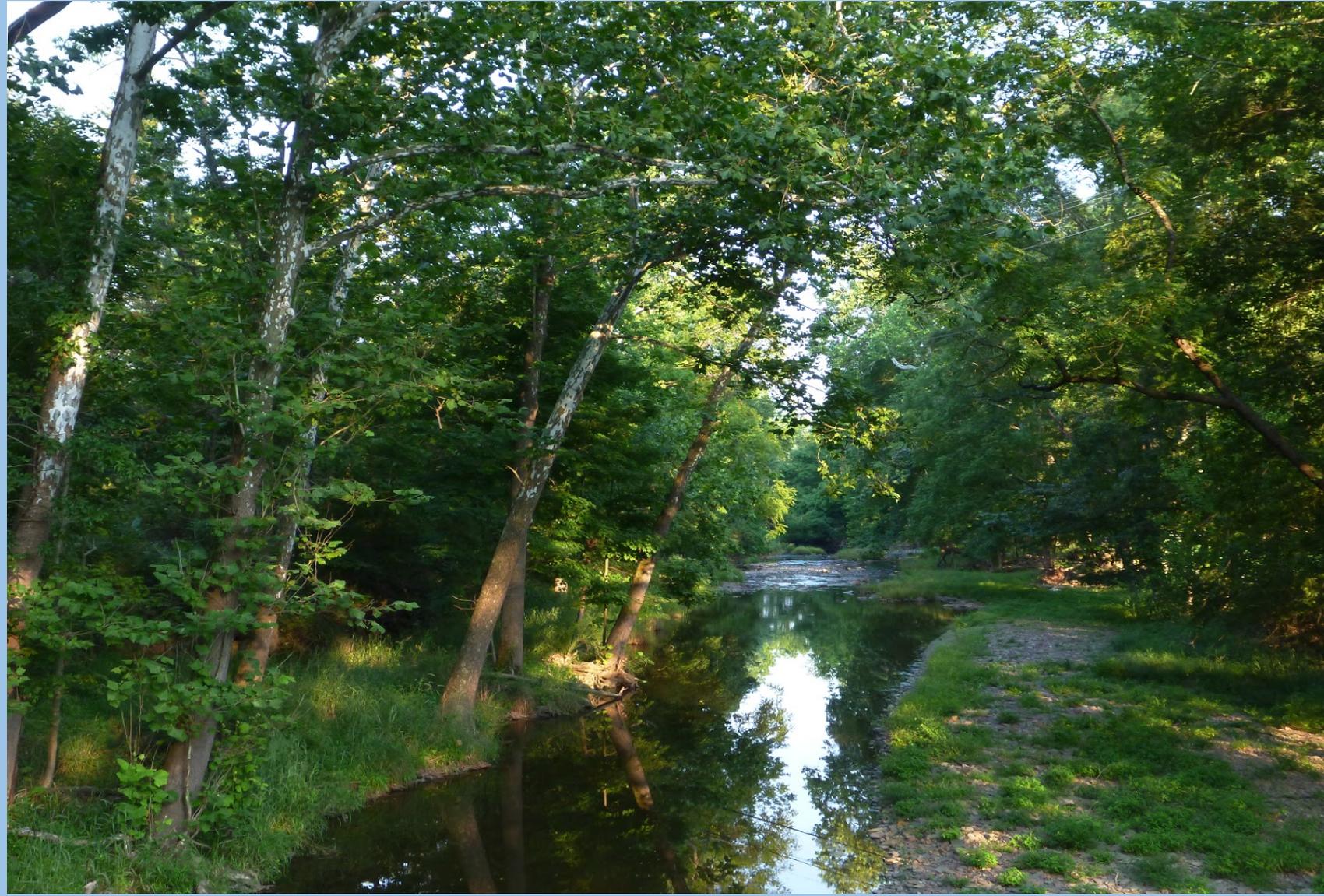
**See [Site Specific Safety Issues at the Headquarters Road Bridge](#), [Mark L. Stout, PhD](#)*

A Solution To Solve a Non Existent Traffic Problem

PennDOT has yet to design a viable replacement plan that would handle expected traffic significantly better than the existing bridge. In fact, no-one has found a more efficient bridge solution than what is already there.

The current plan solves NO problem, but does create them, e.g. inflicting extensive permanent damage to Tinicum Creek and the historic resources around it, and creating new traffic safety concerns due to higher speeds.

The protected resources around the bridge can't realistically be removed, or reshaped to make more room for the oversized two-lane structure proposed.



Existing view downstream from Headquarters Road Bridge.

What PennDOT Didn't Consider in 2005 When It First Proposed Demolition of Headquarters Road Bridge

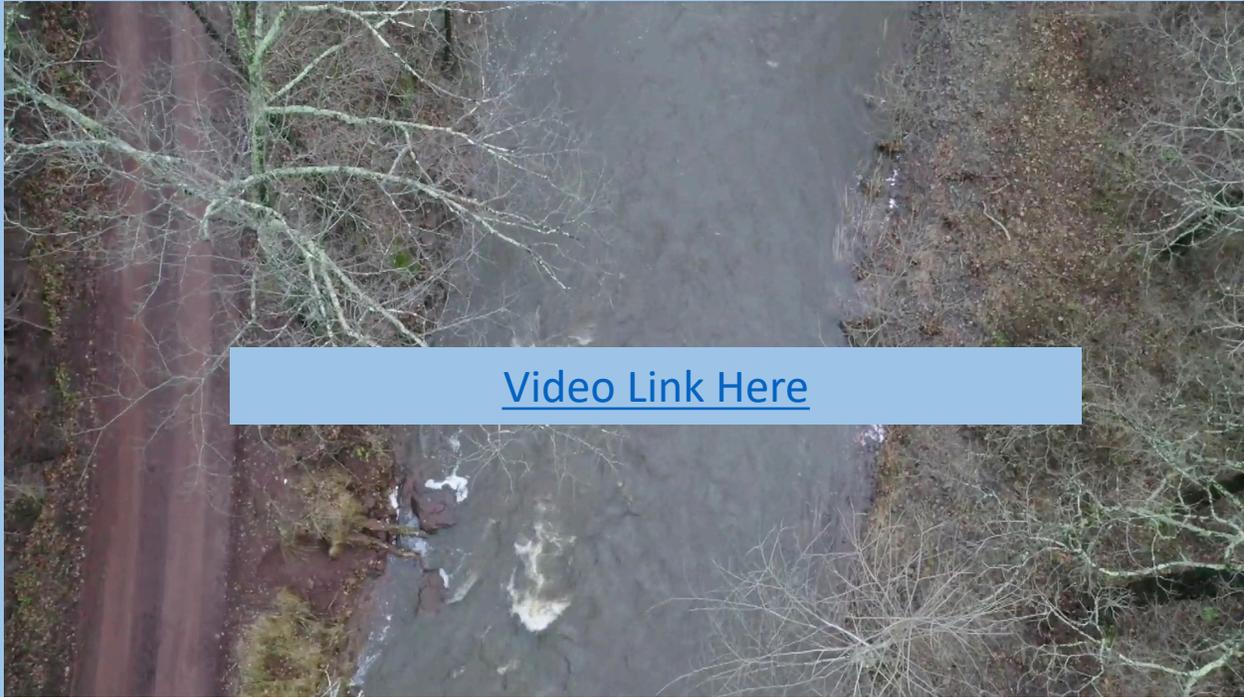


In 2005, when the political decision to demolish and replace Headquarters Road Bridge was made, the critical resources shown in this photograph, including the Historic District designation, were largely ignored and/or dismissed as evidenced by their disregard and/or dismissal in the original Purpose and Need statement used to justify the demolition proposal.

Subsequent amendments to the Purpose and Need Statement continue to ignore the irreplaceable history and natural values that will be irreparably harmed.

The only nod to our historic, environmental and rural heritage, and the tremendous community investment in their preservation has been to add a goal of being “sensitive to the historic and rural nature of the surrounding area.”

Little Changes Create Big Problems in this Physically Constrained Site



[Video Link Here](#)

Upstream of the bridge, boulders dumped in Tinicum Creek have diverted stream flow in the last 20 years, redirecting it from center channel to the downstream bridge abutment.

PennDOT's proposed response fails to consider less invasive and less costly natural channel design solutions and instead proposes to demolish the bridge and move the entire replacement 15' to the west to align it with the newly diverted channel.

Video demonstrates:

- Sensitivity, and volatility, of stream flows in response to channel modifications,
- That PennDOT proposal to pull back the historic bridge abutment 15 feet will wipe out the historic, and privately owned, downstream agricultural lands, and totally destabilize the stream channel so as to inflict erosion on downstream landowners and have unassessed downstream consequences,
- There are natural channel modification solutions for flow conditions that PennDOT has totally overlooked and ignored despite public and expert comment.



Changes Create Big Problems in this Physically Constrained Site

PennDOT's replacement structure moves the bridge abutment 15' to the west.

The impact?

To erode out the downstream buffer, preserved lands and private property, resulting in cascading downstream flow, erosion, habitat and water quality harms which are all being ignored.

PennDOT's Plans Are So Controversial They are Untenable for the Community, Political Leaders, as well as Historic & Environmental Advocates The Outcome Will Be Years of Litigation Rather Than A Near-Term Solution

PennDOT's plans to:

- demolish this irreplaceable historic structure,
- inflict irreparable harm on an EV and Wild & Scenic designated stream,
- subject property owners to the State's onerous power of eminent domain,
- irreparably alter a nationally recognized historic district and collection of historic bridges unparalleled anywhere in the nation, and
- deprive our community of the economic values provided by these unrivaled historic and environmental resources,

are so controversial and problematic that years of delay are inevitable due to:

- Political Opposition,
- Community Opposition,
- Environmental Opposition,
- Litigation Opposition (including a first case already filed in the US District Court for the Eastern District of Pennsylvania challenging the decisionmaking process and failure of the state and federal agencies involved to fulfill their legal procedural legal obligations), &
- Eminent Domain Opposition



**U.S. DISTRICT COURT FOR THE
EASTERN DISTRICT OF PENNSYLVANIA**

DELAWARE RIVERKEEPER)	
NETWORK, and the DELAWARE)	
RIVERKEEPER, MAYA VAN ROSSUM,)	
)	
Plaintiffs,)	
)	COMPLAINT FOR
v.)	DECLARATORY
)	JUDGMENT
)	CASE NO. _____
PENNSYLVANIA DEPARTMENT)	
OF TRANSPORTATION,)	
FEDERAL HIGHWAY)	
ADMINISTRATION, GREGORY)	
G. NADEAU, FHWA)	
Administrator, in his official capacity, and)	
LESLIE RICHARDS, PennDOT Secretary,)	
in her official capacity,)	
)	
Defendants.)	

The Needs of Our Community, Protection of the Historic Headquarters Road Bridge and Preservation of the Exceptional Value Tinicum Creek can all be achieved through rehabilitation of the one-lane Headquarters Road Bridge, within its current footprint, coupled by natural channel restoration of Tinicum Creek to enhance flow and habitat.

All That is Needed is Leadership.

