

March 7th, 2017

Sarah Clarke
Cultural Resources Program
Environmental Division
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219

Re: Reevaluation of Statewide Historic Bridge Inventory - Comprehensive Look at Remaining Inventory

Dear Ms. Clarke:

Piedmont Environmental Council (PEC) submits the following in response to your request of January 12th, regarding VDOT's re-evaluation of its statewide historic bridge inventory.

The Piedmont Environmental Council (PEC) is a non-profit land conservation and land use advocacy group established in 1972 to promote and protect the northern Piedmont's rural economy, natural resources, history and beauty. PEC has been heavily involved in efforts to either preserve or apply contextual design in the replacement of historic bridges throughout our nine county region including:

- Morgan Ford low water bridge crossing the Shenandoah between Clarke and Warren counties.
- Waterloo Bridge the state's oldest metal truss bridge, spanning the Rappahannock River between Fauquier and Culpeper counties.
- John G. Lewis Bridge, a metal truss in Loudoun over Catoctin Creek.
- Secretary Sands Road bridge, a metal truss bridge over the Hardware River in Albemarle County.
- Black Cat Road bridge in Albemarle County.
- Hibbs Bridge on Snickersville Turnpike in Loudoun County.
- Little River Turnpike Bridge on Route 50 in Loudoun County.

The Commonwealth's historic bridges create a sense of place and a link to the past. These bridges - versus featureless concrete slabs - are community amenities. They provide not just the physical crossing of a stream or river, but an experience that connects people to both the road and the surrounding landscape.

PEC staff has been reviewing the available bridge inventories for not only the northern

Piedmont, but for the entire Commonwealth.¹ Attached are two lists:

- The first is of metal truss and masonry and concrete arch bridges that are immediately threatened. This list was developed using the National Bridge Inventory (NBI) with additional information about replacements, description, and survey work done from VDOT's Six Year Improvement Plan (SYIP) and VDHR's Cultural Resource Information System (VCRIS).
- The second attached list is our best effort to compile a comprehensive list of potentially historically significant bridges (bridges 50 years or older). It was developed from the NBI with information about scheduled bridge replacements from VDOT's SYIP, information about eligibility and contributing resources from the VCRIS, and design details about the bridges from the VTRC's Metal Truss and Masonry and Concrete Arch Bridge Surveys, VCRIS, and BridgeHunter.com (when no information was available from state government sources). This list does not include bridges that, to the best of our knowledge, have been removed from the road system but are still under VDOT ownership (ie pedestrian bridges, bypassed bridges, replaced structures, etc).

Unfortunately, we were not able to review concrete non arch bridges at this time due to the high number of structures and the limited time available.

Our research has brought us to three major findings regarding historic bridges in Virginia. First, we lack a comprehensive database, demonstrating the need for better coordination between the various government agencies involved. Second, in our opinion, where bridges have been evaluated and dismissed, it is often due to an inappropriate application of the criteria used to determine individual eligibility. Lastly, current practices and policies are resulting in significant loss of these structures.

Need for a Comprehensive Database

Virginia lacks a comprehensive inventory of its historic bridges. The data provided as an attachment is our best attempt to create such an inventory by pulling from various sources. VDOT and VDHR must establish a comprehensive and publicly accessible inventory of all historic bridges (pre-1967; 50 years and older). In order to meet VDOT's specified timeline for

¹ Inventories include information from:

- VDOT (virginiadot.org/info/bridge_lists.asp; syip.virginiadot.org/Pages/allProjects.aspx)
- FHWA (National Bridge Inventory)
- Virginia Transportation Research Council (VTRC)
- Virginia Department of Historic Resources (via VCRIS)
- Ugly Bridges (<https://uglybridges.com/va/>)
- BridgeHunter.com (<https://bridgehunter.com/>)

comment, PEC had to quickly compile a single, comprehensive bridge list from various sources. This was necessary before we could begin to understand the current situation. And even with that effort, there were still significant gaps due to inconsistent, conflicting, and/or missing information. For example:

- The VDOT list, while comprehensive, contains no information about the bridge type. (i.e. which bridges are metal truss, which are masonry, etc.)
- The NBI list is extremely detailed and informative, including bridge type, yet the inventory does not include all VDOT bridges. (Note: bridges below a certain width are not included.)
- The VTRC inventories of older metal and masonry/concrete bridges is detailed, yet of the 621 metal truss bridges “inventoried” in the 1970s and 80s, none are identified with a specific location or VDOT bridge number.
- The VDHR inventory does not always identify bridges by their VDOT or federal identification number.

Evaluation of Individual Eligibility

We applaud VDOT’s reevaluation of the Commonwealth’s historic bridge inventory; but a useful product at the end of this exercise will require a more comprehensive methodology than has been used in previous evaluations for individual eligibility. A select few historic bridges have been considered individually eligible for listing on the NRHP and even fewer have been listed. The 65 historic bridges that VDOT included in its response to our request appear to be those that are deemed individually eligible. However, we believe that the remaining historic bridges in the state have not been reasonably assessed under Criteria C² or fully evaluated based on all aspects of integrity³.

From the available VDHR information, bridges appear to be evaluated based on Criteria C which is defined as embodying the, “*distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.*”

Many of the remaining bridges beyond the 65 individually eligible bridges mentioned in the VDOT letter embody distinctive characteristics of a *type, period, or method of construction* and deserve further evaluation. However, a number of the threatened metal truss bridges are considered ineligible for individual listing because, “*the resource is considered a typical*

² U.S. Department of the Interior, National Park Service. Section II. NATIONAL REGISTER CRITERIA FOR EVALUATION. <https://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf>.

³ U.S. Department of the Interior, National Park Service. Section VIII. HOW TO EVALUATE THE INTEGRITY OF A PROPERTY. <https://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf>.

example of the period and is common in design, workmanship, and materials.” Given the scarcity of remaining resources, and an apparent failure to appropriately consider factors including *setting, design, and feeling*, that rationale for dismissal no longer applies. These few remaining truss bridges are anything but typical.

Further, it appears that little to no research into the history of construction, associated people and events have been done to truly evaluate these bridges under Criteria A or B. Although we understand that the information on the VCRIS system may not be complete, it was troubling to see how many bridges have been replaced or are planned for replacement with no information about evaluation done within the last 10 years.

The integrity of these structures, which should qualify under Criteria C, is not being fully assessed. According to the National Park Service, a resource that retains historic integrity will possess several, and usually most, of these seven aspects:

1. Setting—the character of the location and how the bridge is situated in relationship to other features, such as the roadbed and landforms.
2. Materials—the elements that were originally combined to construct the structure.
3. Design—reflects the historic function and technology. Design applies to individual structures as well as districts.
4. Location—the place where the bridge was originally placed or where a historic event occurred. Integrity of location can be extremely important and most historic buildings lose their historical significance if they are moved. Bridges, on the other hand, have traditionally been moved from site to site, so location integrity will not always be a disqualifying issue.
5. Workmanship—evidence of the builder’s craft skills and technology.
6. Feeling—the expression of the aesthetic or historic sense of a particular time period.
7. Association—the direct link between an important historic event or person and the bridge. Association requires the presence of physical features to convey the relationship.

Many of these bridges seem to retain high integrity under Criteria C, yet they have been summarily written off as *common and typical examples of the time period in which they were built*. Further, each structure is being reviewed in a vacuum without evaluation of the remaining inventory in the state. As you can see in the table below Virginia has completely lost a number of metal truss types and will have few remaining through and pony trusses of any type, and notably only one Warren through truss.

Pre-1933 Metal Truss Bridges Remaining by Type For Discussion Feb 22, 2017							
Bridge Type	1970s (VTRC)	1997 (VTRC)	2017 (VDOT)	Lost	Planned Replacement (NBI, VDOT)	Listed or Eligible to be Replaced (NBI)	Remaining, in a few years?
Pony Pratt Full Slope		49	14	35	12	2	2
Pony Warren with Verticals		45	14	31	10	1	4
Through Pratt Full Slope		40	12	28	7	4	5
Through Warren with Verticals		5	2	3	1	1	1
Through Camelback		8	3	5	2	1	1
Pony Warren Hybrid		7	1	6			1
Deck Warren with Verticals		2	1	1			1
Pony Pratt Half Hip		6	1	5	1		0
Through Warren Hybrid		4	1	3	1	1	0
Through Warren Polygonal / Pony Pratt Full Slope		2	2	0	1		1
Deck Pratt		1	1	0			1
Through Pratt Full Slope / Deck Warren		1	1	0			1
Deck Warren Modified		1	1	0			1
Pony Warren		1	1	0			1
Through Camelback /Through Pratt		1	0	1			0
Through Warren Polygonal		4	0	4			0
Pony Warren with Verticals with Vertical End Post		2	0	2			0
Through Warren Continuous		2	0	2			0
Pony Pratt Truss Leg (Bedstead)		1	0	1			0
Deck Warren Hybrid		1	0	1			0
Through Thatcher		1	0	1			0
Pony Lane		1	0	1			0
Through Parker		1	0	1			0
Through Pennsylvania		1	0	1			0
Pre-1933 Total	623	187	55	132	35	10	20
Post-1932		58	20	38	15		5
Existing (Pre-1933 and Post-1932)		245	75	170	50		25

Significant Loss of Historic Bridges throughout Virginia

Alarmingly we estimate that over 90% of the metal truss bridges surveyed by VTRC in the 1975 study and 75% of the masonry and concrete arch bridges survey in the 1984 survey have already been lost.

The most obvious threat to these structures is replacement. But the continuous secondary threat is lack of maintenance. The VTRC's *2001 Management Plan for Historic Bridges in Virginia* emphasizes the, "importance of preventive maintenance in addition to any necessary repairs or rehabilitation: ongoing preventive maintenance is important as an aspect of both responsible stewardship of a historic resource and responsible handling of public monies."

However, it appears that VDOT does not follow this recommendation, resulting in incidental or intentional demolition by neglect. The majority of the metal truss bridges and some of the

masonry and concrete arch bridges are structurally deficient with superstructures and substructures often rating poor to serious condition in the NBI. For example, in bridge inspection reports for the Waterloo Bridge (VDOT #6906) it is apparent that the recommended repairs were ignored. Between 2004 and 2009 VDOT inspections of the Waterloo Bridge repeatedly include the same 18 repairs; yet this work was not completed. Not surprisingly, in 2010 the list of necessary repairs was replaced with a statement saying the structure is scheduled for replacement. In January of 2014, the bridge was closed to traffic and officially listed on the SYIP for replacement.

This attrition, through what appears to be intentional neglect, cannot be easily dismissed nor can the Waterloo Bridge be treated as a rare example. The VTRC's 1975 study documented over 620 pre-1933, metal truss bridges in the Commonwealth. Of these, about 60 appear to remain. Of those, almost half are scheduled for replacement in VDOT's SYIP. Furthermore, neither individual listing nor being a contributing structure within a historic district appears to offer protection. Many of these, including a number of the metal trusses in VDOT's January 12th letter, have been replaced, bypassed and 'left in place,' or are scheduled for replacement. Of those bypassed and left in place, many will soon be lost if inspection and preventative maintenance continues to be no longer conducted. Two examples of this are McPherson's Ford Bridge in Alleghany and Falling Creek Bridge in Chesterfield County.

Important to note, many of these bridges that have been replaced or 'left in place' are contributing resources to historic districts. The intent and value of a historic district is the "sum of its parts." Contributing structures--like bridges--are "the parts." All of these parts contribute to the context and richness of a district. Historic districts cannot be sustained when, piece by piece, the parts that make them whole are removed or allowed to deteriorate.

A number of other historic bridges, including at least three of the currently individually eligible bridges, have been converted to pedestrian facilities. Pedestrian facilities are a wonderful use of these structures. However, maintenance remains important and it does not appear that these pedestrian bridges are being maintained by VDOT. For example VDOT bridge #6902, Clarkton Bridge in Charlotte County, was closed to vehicular traffic in 1998 but remained open to pedestrian traffic. Its condition was then allowed to deteriorate further, resulting in its 2016 closure to pedestrians. VDOT must identify a locality or other entity willing to take ownership and maintenance of these pedestrian structures before VDOT converts them and removes them from their maintenance obligations.

Conclusion

The current practice and policy regarding the evaluation of historic bridges and the subsequent stewardship of those designated is insufficient to protect these dwindling resources. It has

resulted in a significant loss of Virginia's old and structurally unique bridges; especially metal truss bridges. There is a clear need for a comprehensive look at all of these structures by VDOT and VDHR. This process should start with the creation of a full inventory of pre-1967 bridges, and then continue with annual updates of that inventory. Reevaluation of the structures should be done in a manner that recognizes their current rarity, better applies the relevant criterion, and assesses the integrity of the structures as intended by the Department of the Interior's standards. Reevaluation should also include thorough background research into possible events or people that might be associated with these bridges. To stem the loss of these structures, VDOT must develop a better maintenance program and more clearly demonstrate that these bridges cannot be rehabilitated prior to moving to replace these historic bridges.

Again, PEC appreciates the invitation to submit these comments and we welcome the opportunity to work as a partner with VDOT and other state agencies in identifying and subsequently preserving the state's remaining historic bridges. We recognize that this is an ongoing process and PEC will continue to review the concrete bridges we were unable to review at the time of this submittal. Additionally, and in that partnership, we offer our abilities to generate public awareness of these structures and to seek public support for their rehabilitation, preservation, and thorough documentation.

Sincerely,

Julie Bolthouse
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Piedmont Environmental Council