



CULTURAL HERITAGE PARTNERS, PLLC  
*innovation for preservation*

VIA EMAIL

October 29, 2013

Colleen K. Meiswich  
Sr. Project Manager/Environmental Planner  
A.D. Marble & Company  
375 East Elm Street  
Suite 101  
Conshohocken, PA 29428

**Re: Headquarters Road (S.R. 1012, Section BRC) Bridge Over Tincum Creek,  
Tincum Township, Bucks County, PA (MPMS 13716)**

Dear Ms. Meiswich,

On behalf of our client Consulting Party Delaware Riverkeeper Network, we hereby reply to the September 12, 2013 Comment Response Document prepared by A.D. Marble. Consultants who contributed to this reply include: Delaware Riverkeeper Network's counsel Cultural Heritage Partners, PLLC; John Nystedt, RLA, LEED AP, Restoration Specialist; Mark L. Stout of Mark L. Stout Consulting; and Douglas L. Bond of McMullan & Associates.

Sincerely yours,

Marion F. Werkheiser

Enclosure

**Delaware Riverkeeper Network's Reply to PennDOT's Comment Response Document,  
prepared by A.D. Marble, dated September 12, 2013 ("Resp. Doc.")**

**1. The Consulting Party meetings should be videotaped.**

*The Delaware Riverkeeper Network takes strong issue with PennDOT's opposition to recording the Consulting Party meetings. Resp. Doc. at p. 1.*

*The application of Pennsylvania's wiretapping law – which, as the Response Document acknowledges, requires an expectation by the meeting participants that the communications will be recorded in order to apply – is unnecessary and inappropriate in this context: (1) the Consulting Parties were told at the June 17, 2013 meeting that it might be recorded; (2) many Consulting Parties commented on the inaccuracy of the minutes and the ineffectiveness of the facilitator, both excellent reasons to record Consulting Party meetings;<sup>1</sup> and (3) the location of the Headquarters Road Bridge is, of course, widely known, making your references to "harm to a historic resource" or "the potential to expose confidential information" non sequiturs. In this matter, there are no archaeological sites that require protection from disclosure. PennDOT's inflammatory statement that recordation would constitute a felony under Pennsylvania law thus has no basis in fact, and itself is having "a chilling effect" on the Consulting Parties' willingness to participate openly and cooperatively in the Section 106 process.*

*The Consulting Parties should be entitled to decide, by vote, at the beginning of Consulting Party meetings whether they wish it to be recorded. If the vote is in favor, a sign can be posted at the front to remind all participants that the meeting is being recorded. By this approach, the expectation of recordation is clear and the Pennsylvania wiretap law causing so much concern to PennDOT will no longer be an issue. Also, the Consulting Parties' concerns regarding erroneous meeting minutes and ineffective facilitation will be alleviated. The Delaware Riverkeeper Network strongly urges PennDOT to reconsider its unreasonable and groundless position regarding recordation of Consulting Party meetings.*

**2. The Purpose and Need Statement is Inadequate**

*The Delaware Riverkeeper Network's counsel sent a lengthy letter to PennDOT, dated July 30, 2013, explaining its view of Section 106, NEPA and 4(f) processes, and how they work in concert. Just this past spring, the White House Council on Environmental Quality (CEQ) and the Advisory Council on Historic Preservation (ACHP) released a handbook designed to help coordinate required review processes under Section 106 and NEPA.<sup>2</sup> The Delaware Riverkeeper Network reminded PennDOT of this guidance and of its obligation to follow it in its June 17, 2013 letter, but no substantive response was made (see Resp. Doc. at pp. 12; 15-16, deferring this issue as "not Section 106").*

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<sup>1</sup> A.D. Marble has not yet issued its separate document addressing the comments on the minutes. Resp. Doc. at p. 35.

<sup>2</sup> NEPA and NHPA: A Handbook for Integrating NEPA and Section 106, available at <http://www.achp.gov/nepa106.html>.

*In apparent disregard of statutory and regulatory requirements, as laid out in the CEQ/ACHP Handbook, the Response Document is littered with attempts to delay and divide, rather than advance and coordinate. In many instances, A.D. Marble's response to comments is that "these issues are not Section 106 issues" (i.e., Resp. Doc. at pp. 11, 12, 16, 23). Such a response is neither helpful nor appropriate.*

*The problem revealed by A.D. Marble's attempt to deflect core issues – as addressed in the Delaware Riverkeeper Network's July 30 letter – is the inadequacy of the Purpose and Need Statement ("P&N"). The P&N declines to acknowledge that saving the Bridge should be a purpose or need of the project, and instead assumes that the Bridge cannot be rehabilitated. The Delaware Riverkeeper Network's and other Consulting Parties' previous submissions point out numerous instances evidencing that replacement has been the sole considered option in this process thus far. See, e.g., Resp. Doc. at pp. 36; 39-40.*

*The value and importance the Bridge can hardly be overstated. It is individually eligible for the National Register of Historic Places, according to the Keeper of the National Register via letter dated April 28, 2006. See Resp. Doc. at p. 5. Moreover, it provides immeasurable value to the historic district and as such to the Wild & Scenic designation of the Lower Delaware River. Tinicum Creek has been designated an Exceptional Value waterway, and the currently proposed replacement work could adversely affect that designation. See also Delaware Riverkeeper Network Letter, June 17, 2013 (describing importance of Bridge to local environment and community). Shrugging off evidence of those adverse impacts as "not a Section 106 issue" (Resp. Doc. at p. 3) contradicts statutory requirements in Section 106 and NEPA to coordinate the processes.*

*As laid out in detail in the Delaware Riverkeeper Network's July 30, 2013 letter, "PennDOT has not involved the public in drafting the purpose and need statement for the Headquarters Road Bridge, as required under both NEPA and Section 4(f), and has developed a statement that drives the analysis of alternatives toward PennDOT's preferred outcome." Delaware Riverkeeper Network Letter, July 30, 2013, at 5. Accordingly, the flawed process is leading to a flawed outcome, which risks the loss of an invaluable historic resource and significant harm to Tinicum Creek and the Lower Delaware River Wild & Scenic Designation.*

**3. A two-lane alternative could induce greater traffic and higher speeds and therefore potentially an increase in number and severity of crashes.**

*PennDOT has argued that widening the crossing of Tinicum Creek would not induce additional traffic on Headquarters Road due to geometric deficiencies on the road and its poor connectivity to the east and west. Resp. Doc. at p. 3. However, those features are common to the roads east of Route 611, and, as we have suggested, supposedly isolated changes in the network can cause changes in traffic patterns. Delaware Riverkeeper Network experts believe that a wider crossing could induce additional traffic. In addition, an increase in the width of the bridge and accompanying geometric improvements could cause increases in the speed of traffic. Both increased traffic and increased speed could potentially result in an increase in the frequency and severity of crashes*

#### **4. PennDot should Rehabilitate Existing Masonry Abutments**

*Based on our review of the PennDOT biennial reports of 2004, 2006, 2008, and 2010, and our preliminary investigations of 2012 and 2013, it is our opinion that there is no need for major reconstruction of the piers and abutments. Rehabilitation of these would include pointing, grouting, and partially disassembling some small areas and then rebuilding those with the original stones. A few cracked stones and slight bulges in the stonework does not mean that the whole substructure is questionable and must be re-built. The fact that some stones appear to be slightly out of plane with adjacent stones for a coursed rubble stone wall does not necessarily mean that movement has occurred. The stones could have been laid that way. Much of the pier and abutment masonry does not exhibit cracks or bulges. Historically, rehabilitation of bridges has been less costly than a new replacement. See Resp. Doc. at p. 3.*

*The proposal by Urban for replacing the stone masonry piers and abutments with a reinforced concrete core with a stone facing is not in conformance with the Secretary's Standards which states "...changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties will not be undertaken." The Standards also state that in areas "...Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and where possible materials". See Resp. Doc. at pp. 3-5.*

#### **5. Test Cores Should be Done to Determine the Composition of the Piers.**

*The composition of the interior of the piers likely consists of smaller stones and mortar given the 5 foot width of the piers and the size of the stones near the base. Investigations by Urban to date appears to have involved prodding at a few locations in the pier where "dirt and clay" was found between the stones as indicated in the presentation photographs at the June 17, 2013 meeting. This is in contrast to other locations where mortar was found in the interior of the pier between stones and these have been also photographed and will be presented. The dirt and clay could simply have been deposits in open mortar joints that occurred during high water. Test cores would provide more information on the construction of the pier but these have not been performed, apparently due to concerns about "fracturing stone" and "allowing moisture infiltration". Resp. Doc. at pp. 4-5. Small cores in stone masonry structures are commonly taken without any problems and the core holes can be filled in such a way that one cannot tell without close observation that the core was removed. There is no problem with taking small cores from large piers such as those at Headquarters. Also, it is important to keep in mind that this is a simple span bridge where the stringers bear on the perimeter stones, not the interior fill.*

*Concerns of bond/interlocking strengths, bulging, cracking, etc., can all be addressed by applying the appropriate rehabilitation methods. The compressive strength of the stone, at 11,318 psi (much stronger than typical concrete at 4,000 to 6,000 psi), is not an issue with the load carrying capacity of the bridge. It is not clear why there would be any need of a load test since the computed masonry compressive stresses are low when compared to code values. See Resp. Doc. at pp. 4-5.*

**6. Traffic counts indicate that a one-lane alternative is adequate to meet current traffic needs.**

*As PennDOT notes, there have been significant fluctuations in traffic volumes on Headquarters Road in recent years – due mainly to the effects of various bridge closures in the area – but at no time have those volumes reached a point at which a one-lane cross-section at the Headquarters Road Bridge can be shown to have been unable to handle the traffic demands made on it. See Resp. Doc. at pp. 5; 24-25. Although the most recent count cited by PennDOT – an AADT of 584 in 2009 – is somewhat higher than the 400 AADT classification maximum for “very low volume roads,” it is still very low by the standards of the metropolitan region. Low traffic volumes are characteristic of the entire roadway network between Route 611 and Route 32 and present no apparent problems to local mobility. One-lane bridges are also typical of Tinicum Township, encompassing two-thirds of the total bridge population and half of the PennDOT bridges, and function successfully in meeting the needs of the traveling public.*

**7. The Bridge is Individually Eligible for National Register.**

*Please confirm that PennDOT has reversed its earlier position that the Bridge is not individually eligible for the National Register, and now acknowledges that the Bridge – due to the Keeper's 2006 letter – is individually eligible for the National Register. Resp. Doc. at p. 5.*

**8. PennDot Policy Supports a One-Lane Bridge.**

*Although PennDOT cites its own Design Manual as a warrant for a wider bridge, we believe the agency has sufficient authority and support within its own policies for selecting a one-lane alternative. See Resp. Doc. at p.8. Its broadest policy document, the Smart Transportation Guidebook: Planning and Designing Highways and Streets that Support Sustainable and Livable Communities, includes among its principles:*

- *Tailor solutions to the context: “Roadways should respect the character of the community, and its current and planned land uses.”*
- *Tailor the approach to the specific need.*
- *Plan the project collaboratively with the community.*
- *Integrate land use planning and transportation planning.*
- *Focus on the overall transportation network rather than a single roadway.*

*Although PennDOT references the related concept of Context Sensitive Solutions, it does so only in relation to possible esthetic treatments. See Resp. Doc. at pp. 8-9. A more comprehensive definition is provided by the Federal Highway Administration (and quoted in the Smart Transportation Guidebook): “a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist.” PennDOT has demonstrated policy flexibility with regard to one-lane bridges in other contexts, notably in the Stone Arch Bridge program and with respect*

*to bridges in the “turnback” program. Indeed, PennDOT concedes that it proposed a one-lane bridge to Tinicum Township and withdrew the proposal only when the township did not agree to assume maintenance responsibilities.*

*In addition, the proposed rehabilitated single lane bridge width is 16 feet. This may not comply with current PennDOT Design Manual standards, but we assume that a Design Exception can be applied for as has been done for other Historic Properties and as is suggested in the AASHTO Guidelines for Historic Bridges Rehabilitation. See Resp. Doc. at p. 8.*

**9. Future traffic demand is constrained both by local land use regulations and by open space preservation and is not expected to increase.**

*Tinicum Township has in place a comprehensive set of land use and zoning plans and ordinances designed to protect the rural character of the town by discouraging inappropriate development. Under the zoning ordinance and accompanying overlay district ordinances, development is steered toward the village of Ottsville, the Route 611 corridor, and limited infill in the existing villages east of Route 611. This planning and zoning regime is accompanied by a vigorous open space protection program. More than one-third of the land in the town is already protected by a variety of means, including government ownership and property acquisitions and easements funded by public and private funds. Of the remainder, half is considered unsuitable for preservation (villages, roads, water, small properties, etc.) and the other half is being actively evaluated for ongoing open space programs. These factors lead to the conclusion that “expected vehicular need” and “future traffic volume” will not grow and could indeed fall. Resp. Doc. at pp. 18-19.*

**10. Local, county, and regional plans concur in classifying Tinicum Township east of Route 611 as a Rural Conservation Zone, where through automobile trips should not be encouraged through roadway widening.**

*The Tinicum Township comprehensive plan (now being updated) identifies the town as an essential part of a greenbelt – “a band of land in rural and conservation uses” – separating the Philadelphia, New York, and Lehigh Valley metropolitan areas. The plan’s goals include preserving and enhancing the traditional character of the town (“particularly its heritage of buildings and landscapes with their natural beauty and rural quality”), conserving the natural environment, and protecting agricultural land from development. Tinicum’s vision is reinforced and articulated at a regional level both by the Bucks County comprehensive plan and by the long-range plan of the Delaware Valley Regional Planning Commission. The county plan designates most of Tinicum as a Natural Resource/Conservation Area, which should be protected from development, while some land is classified as Rural Resource and a Rural Center is identified at Ottsville. The DVRPC plan classifies most of the town as Rural Resource (“agricultural, natural, and rural areas worthy of heightened preservation efforts by governments and nonprofit land trusts”), with some corridors designated as part of the Greenspace Network and a few pockets of Infill and Redevelopment. Parts of four significant Conservation Focus Areas are identified there. Taken together, this ensemble of plans has the effect of establishing Tinicum Township, east of Route 611, as a Rural Conservation Zone. As a policy matter, the roadway network in the zone should be planned, designed, and maintained to*

*support that land use, so that roadway widenings and capacity improvements, which could induce more through trips, should be avoided. See Resp. Doc. at pp. 14-15; 22-23.*

**11. The roadway network in the whole of the Rural Conservation Zone must be managed as a system, so the entire zone becomes an area of potential effect for any major change in that system.**

*Although the roadway network in Tincum is very rural with low traffic volumes, it nevertheless is a network, and apparently localized improvements may cause dislocation of traffic (as witnessed by the changes in traffic patterns linked to past bridge closures). PennDOT may assert that geometric issues on Headquarters Road east of the bridge are outside the scope of the current project, but that does not diminish the fact that a widening at the bridge may, for instance, induce through trips through the heart of the Ridge Valley Rural Historic District or into the very constricted local roadway grid in Erwinna. From a planning perspective, future effects of a different bridge configuration at the Headquarters Road Bridge site must be considered within the context of the whole Rural Conservation Zone. See Resp. Doc. at pp. 3; 14-15.*

**12. A one-lane alternative will accommodate emergency services with minor geometric improvements.**

*According to DRN hired exerts, minor geometric improvements on the eastern approaches to the Headquarters Road Bridge may be sufficient to provide reasonable access by emergency vehicles, and we will make specific recommendations for this purpose. This would essentially be the same solution as that selected at the Geigel Hill Road Bridge, where a new, one-lane structure was built within the same footprint as the old bridge, and a "slight widening of roadway pavement" on one approach was found to be sufficient for fire truck access. See Resp. Doc at p. 19.*

**13. Tincum Township is characterized by significant amounts of roadway infrastructure that falls below typical design standards (one-lane bridges, narrow roads, unpaved roads, significant horizontal and vertical curvature) so that "functional obsolescence" of one isolated element in the network cannot be considered a need.**

*The rural roadway network of Tincum Township contains numerous one-lane bridges (two-thirds of the total bridge count, one-half of the PennDOT bridges), three covered bridges, three fords, several gravel roads (protected by a Scenic Roads ordinance), and many narrow, winding roads which climb up the bluffs and follow stream corridors through the hills. No one would contemplate trying to bring the network "up to standard," which would require complete reconstruction of virtually all the roads east of Route 611. In this context, evaluating one element of the network as "functionally obsolete" makes no sense. See Resp. Doc. at pp. 26-27.*

**14. The crash history does not support the need for a two-lane alternative.**

*PennDOT refers to a history of 10 crashes “at the bridge location” but does not provide any details as to the type, cause, and severity of these crashes, a comparison to other rural bridge locations, or an analysis of how potential bridge improvements would reduce the probability of future crashes. Resp. Doc. at pp. 8-9. Although we are still seeking additional crash data, we do not currently see any evidence that the crash history supports building a wider bridge.*

**15. Tincum Creek should be Re-Aligned to its Historic Alignment.**

*There is an opportunity for re-aligning Tincum Creek to its historic alignment so that the approach of the creek aligns with the existing openings in the Headquarters Road Bridge, thus negating the need to re-build the structure for creek flow reasons, and keeping the historic bridge/stream relationship and historic bridge shape/structure. Resp. Doc. at p. 23.*

*Re-alignment of the creek to the historical alignment is feasible with skilled analysis and design using fluvial geomorphology, hydrology, and natural channel design methods. Natural channel design can address and successfully deal with erosion and deposition so that over time, a re-aligned creek could be stable as it approaches the Headquarters Road Bridge. By re-aligning the creek to its historic path, the scour issues seen currently along the bridge wing walls would be minimized.*

*In conjunction with the natural channel design, fish habitat can be improved as part of the work -- so important in this exceptional quality creek. Improved upstream storm water practices can additionally help the water quality and quantity issues of the creek. See Resp. Doc. at p. 23.*