

VIRGINIA'S EXPERIENCE IN PRESERVING HISTORIC STRUCTURES

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In September 1977, the Virginia Department of Highways and Transportation nominated 7 of its metal truss bridges to the State and National Registers of Historic Places. The bridges were placed on the Virginia Register in November and the National Register approval is pending. I think all would agree that this was an unusual action for a transportation department to take since it might normally be expected to resist what would be perceived as a loss of flexibility in future planning. The nominations were made as an outgrowth of research done by the Research Council.

The Research Council is jointly sponsored by the Virginia Department of Highways and Transportation and the University of Virginia. The Council functions as the research arm of the Department. We are employees of the Department of Transportation and this colors greatly our approach to research. The overwhelming portion of our research is intended to be applied in a comparatively short time. Also, we consider implementation an important part of our work and a large portion of our effort involves pursuing such implementation. When we initiated a modest research effort on the history of road and bridge building in 1973 we applied these criteria, but actually the usefulness of the data that we've developed (in EIS's, etc.) and the favorable response both from within and from outside the Department to what we've been doing has exceeded our expectations.

The Council's project is divided into two parts. One part involves road history, the second part deals with structures. Our goal for the road history portion is the preparation of a guidebook to aid local historians in the preparation of county road histories. As an example of unexpected public response, these road order publications are of great interest to genealogists. We have received over 250 requests for copies.

The second portion of the project concerns the work with highway structures. A statewide inventory of metal trusses has been completed and one is in progress for concrete and masonry arches. The major portion of the truss survey was funded from our State research funds. It was intended that following all of these surveys, criteria would be established for determining historic significance. However, because the rapid progress of the bridge replacement program in Virginia threatened several bridges with obvious historic significance, it became necessary to develop interim guidelines as rapidly as possible. These guidelines were developed as part of our federally funded research and the report is currently undergoing FHWA review. We recently initiated a third project (also federally funded) directed toward exploring various alternatives for upgrading or adaptively using historically significant metal trusses that are functionally obsolete or structurally deficient according to DOT criteria.

Our research is guided by an advisory committee consisting of representatives from

the affected divisions of the Virginia Department of Highways and Transportation (Location and Design, Bridge, Public Information, Environmental Quality and Planning), the Virginia Historic Landmarks Commission, the Universities of Virginia and West Virginia, HAER, and ASCE.

Statewide, about 500 trusses were surveyed. These all predated 1932 when the State of Virginia assumed jurisdiction over all roads and bridges from the counties.

In developing the criteria, it was deemed desirable to develop the rating in some numerical way. After consideration of the various factors that enter into such a subjective evaluation, the characteristics of the bridges were grouped into three broad categories (Table 1).

Table 1. Categories of bridge characteristics.

Factors	Points	Percent
Documentation (Age & Builder)	7	(26)
Technology	9	(33)
Environment	11	(41)

Documentation is used to identify the building and age of the truss, and account for 7 points or 26 percent of the total point value. Builders are characterized at three levels of significance (Table 2), the highest level being used for innovative companies that had major impact on the evolution of truss technology.

Table 2. Significance of bridge builder.

Builder-Contribution	Points
Unknown	0
Known - Undetermined	1
- Prolific	2
- Unusual	3

Points are given for increasing age in four groupings (Table 3).

Table 3. Age classification of bridges.

Age	Points
PRE-1885	4
1886-1899	3
1900-1917	2
1918-1932	1

No points are awarded for bridges built after 1932 (this is the date when the state assumed control of all roads and bridges from the counties, and there subsequently was a large degree of standardization). The date of 1885 was established based upon the results of the Virginia survey.

Within the area of technology, points are awarded (Table 4) for configuration, length, and number of spans. The designation unique, unusual, or novel is based upon the Virginia sample. In general a point was awarded for spans in excess of 100 feet for trusses before 1900. A point was also awarded for multiple spans prior to 1900 and for more than three spans prior to 1917.

Table 4. Technology.

Configuration	
Unique	3
Unusual	2
Novel	1
Span - Length	
- Number	1
Patented	1
Materials	1
Integrity	1
Special Feature	1

Other features considered under technology include patented features such as Phoenix columns; materials (steel, wood, cast or wrought iron). A point was given for integrity if the span had not been modified even if it had been moved. A span possessing special features such as decorative details also was given one point.

The third broad area in the criteria reflects environmental factors (Table 5).

Table 5. Environmental factors.

Aesthetic s	4
History	3
Integrity (Site)	4

Aesthetics are judged on the basis that the bridge is an integral part of its setting to the point where removal or relocation would be detrimental to the bridge and the ambiance of the setting. While aesthetics is a subjective matter, experience in applying the criteria has indicated that people with a wide range of background and training can usually agree on the detrimental impact of removal on the fabric of the setting.

"History" embraces a variety of characteristics. The crossing itself might be significant, or it might be associated with an historical property or area. Historic significance might derive from the fact that

the bridge was associated with significant events or circumstances.

Points are awarded for integrity if the bridge is at its original site. Initially, speed of erection was the major selling point for metal trusses. Subsequent generations recognized and capitalized on their reusability. Because of this capability for reuse, an early truss at its original location is quite rare in Virginia and thus merits recognition.

Evaluation of the environmental factors also provides information important for the type of preservation effort to be pursued. For example, if a truss receives high marks in documentation and technological significance but low marks in the environmental category, then relocation of the structure would be warranted. From approximately 500 metal trusses surveyed statewide, 58 were selected as the most likely to be historically significant. The rating system was applied to these bridges by a six-man task group of the Council's History Research Advisory Committee. The historic "significance rating" for these 58 bridges ranged from a low of three to a high of 24 out of a possible 27. The average was 14.5.

Because this was the initial effort to develop numerical ratings for significance, it was necessary to establish a standard by which significance would be judged. Recognizing that the system was subject to further refinement and considering practical questions that suggested initial designation of a comparatively small number of bridges it was decided to set the level higher than might otherwise be the case. After considering various possibilities, it was decided to designate bridges with a rating of 20.0 or greater historically significant and those with a rating of ten or greater potentially significant. This latter figure will probably be upgraded to 15 or 17 with further refinements. Nine of the 58 bridges received ratings of 20.0 or above. Of these one was already on the National Register and another (which rated 21.0) was demolished during the evolution of the criteria.

Registry of the seven trusses will undoubtedly involve future preservation decisions, perhaps in the absence of local interest or ability to finance. The passing of time will bring refinement of the criteria and perhaps difficult preservation questions are yet to be faced. The bottom line of course is money, but the initial step has been taken.

At this point we have much in common with the 19th century traveler. We've begun the journey, we're seeking directions and I hope that we have the courage, endurance and resources to complete it.

CONFLICT ASSOCIATED WITH HISTORIC PRESERVATION
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I am an archaeologist on the cultural resources staff within the Texas Department of Highways and Public Transportation, and we work closely with the engineers to try to solve problems as a team. We rely heavily on each