

PEACE BRIDGE EXPANSION PROJECT

**BI-NATIONAL INTEGRATED ENVIRONMENTAL
PROCESS**

**PEACE BRIDGE DESIGN SELECTION JURY
RECOMMENDATION REPORT**

December 13, 2005

I. Introduction

A. Process Development

After Public Collaborative Workshop #6, interest was expressed by the Partnering Group and many public participants in a Bridge Design Competition to complete the bridge design selection process. The Technical Team evaluated several competitions from around the world and in the U.S. and developed a process in cooperation with the Partnering Group – City of Buffalo, Town of Fort Erie, and Public Bridge Authority – and Lead Agency that would conform with the ongoing environmental process.

A traditional bridge design competition solicits new design concepts from bridge designers and architects based on a defined set of criteria after the environmental process has been completed. Those designs are evaluated and the winning firm is then awarded a final design contract. The Federal Lead Agency in this process advised that the traditional bridge design competition would not conform to the environmental process. Since the original Bi-National Integrated Environmental Process intended to select a preferred bridge design prior to the conclusion of the environmental process and the Partnering Group confirmed this modified process was necessary.

In cooperation with the Partnering Group and Lead Agency, a process was then designed where a Bridge Design Selection Jury would consider the thirty three (33) concepts already generated in the environmental process and recommend a preferred bridge design. That recommended bridge design would then be included in the Draft Environmental Impact Statement/Environmental Screening Report for consideration during the Public Hearing comment period.

The jury would also be given the charge to offer recommendations for enhancements to the recommended design. The concepts to be considered were created by world renowned bridge architects Dr. Christian Menn, Dissing + Wietling (subconsultants to Modjeski and Masters/Buckland & Taylor), and Figg Bridge Engineers.

B. Jury Composition

Review of previous competition processes showed that careful consideration of both aesthetic and technical issues was the key to a successful process. Therefore, the jury was comprised of both general public and technical members equally representing both U.S. and Canada. The public jurors were appointed by Mayor Masiello, City of Buffalo, and Mayor Redekop, Town of Fort Erie. Each mayor also appointed two technical jurors. By agreement, the Partnering Group determined that agencies involved in the bridge aspects of the environmental process should appoint technical members and that one juror from the structural engineering department of the University of Buffalo should also be appointed.

Due to their decision making role in the ongoing environmental process, the Federal Highway Administration (FHWA) and New York State Historic Preservation Office (NYSHPO) determined that while they could participate in jury deliberations they could not vote due to a potential conflict of interest. In order to keep the U.S. and Canadian representation equal, their Canadian counterparts were also made non-voting representatives.

Canadian Members	U.S. Members
<i>Public Jurors</i>	
Ted Ogilvie – Co-Chair	Robert Shibley – Co-Chair
Hon. Richard Shular – Councillor	Hon. Dominic Bonifacio – Councilman
Victor Hill	Martha Bliss
Carolyn Kett	Jeff Belt
Patti Mills-Roy	Catherine F. Schweitzer
Robin Parisi	Olga Karman
Ariana Rackauskas	Lawlor Quinlan
Gord Cumming	Herbert Siegel
<i>Technical Jurors</i>	
Rino Mostacci – Town of Fort Erie	Joe Giambra – City of Buffalo
Ron Tripp – Town of Fort Erie	David DiSalvo – City of Buffalo
Michel Bruneau – UB	Michael Constantinou – UB
Krishan Sood* - PWC	Earl Dubin* – FHWA
Jane Davies* – Fort Erie Museum	Ruth Pierpont* – NYSHPO
Lou Politano – MTO	George Christian – NYSDOT
Joe Cousins – Region Niagara	Os Carosa – NYSTA
Brian Hicks – Transport Canada	Frank Tabert – NYSOHS

*Non-voting jurors.

The project consultant technical team was put under the authority of the jury in order to provide technical and administrative support at the jury’s request. The technical team engaged subject matter experts in the fields of long span bridge design, cost estimating, environmental process, and constructability.

C. Ground Rules

The charge given the jury by the Partnering Group was developed to be consistent with the regulatory process it serves. Even so, within those bounds the jury is autonomous. In preparation for the decision making process, the jury developed a set of operating ground rules to guide deliberations and help assure success. The jury deliberated and finalized the ground rules at their first meeting. The ground rules are as follows:

- 1) Only bridge concepts developed under the Pre-draft EIS are to be considered. However, recommendations for modifications to recommended concept may be presented.

- 2) Jury recommendation must meet project goals and objectives ratified by the Partnering Group (attached). As such:
 - a) Jury recommendation will be included in the DEIS and as such must comply with NEPA, SEQRA, and CEEA processes. Agency jury representatives will provide pertinent information and guidance regarding this.
 - b) Recommendations must consider all environmental, aesthetic, technical, and feasibility factors.
- 3) The process will require reciprocal respect for professional judgment and community values represented by the mix of jurors.
- 4) Jurors should understand the need and importance of attending all meetings to ensure fair and fully informed recommendations.
 - a) Supplemental meetings may be held if deemed necessary by the jury members.
 - b) Supplemental jury meetings in “sub-groups” however, are strongly discouraged except among the jury co-chairs or as discussed among the full jury.
- 5) We begin the process with open minds and assume we can reach a consensus.
- 6) The jury will function with a “one person one vote” rule with chairs also voting.

The recommendations of the jury will be contained in a report that presents the jury’s consensus opinion (e.g. majority opinion). It will also include a full discussion of the views made by the jury members.

D. Decision Making Process

The jury developed a stepped decision making process in order to make consistent progress toward completing their charge – recommending a bridge design to the Partnering Group – within the desired time frame. Toward this end, a draft decision tree was developed which identified the process steps and the considerations at each point in the process, see **Appendix B**. The jury finalized this process at their second meeting but retained the flexibility to modify the decision making process as it progressed. The modifications to the process that occurred are detailed in the meeting chronology below.

II. Meeting Chronology

This section will present the general outline of the jury meetings, subjects discussed, and conclusion reached at each meeting. Given a broad array of questions and the identification of contested interpretations of data, the jury adopted an approach that invited juror questions sent by e-mail and answers developed by the technical team and reviewed by the co-chairs. These question

and answer papers were prepared and distributed to the full jury as questions were received through out the process.

Between meetings draft technical discussion papers were also provided to inform the jury and facilitate discussion. Jurors were encouraged to review and provide comment on these papers prior to each meeting and to ask additional questions of the technical support team. The question and answer papers are presented in **Appendix D** and the background discussion papers are provided in **Appendix C**.

A. Meeting #1 – September 8, 2005

In advance of the first meeting, each juror was sent a package of technical material that had been developed during the course of the environmental process. The technical material consisted of:

- Initial Bridge Study Report – 31 October 2003
- Bridge Concept Technical Evaluation Report (working draft) – 21 January 2005
- Bridge Technical Memo – 17 June 2005
- Executive Summary – 2004 Peace Bridge Inspection Report
- Cost Estimates – Pre-Draft EIS Appendix I – November 2004
- Finance Plan Report Summary – 25 May 2005
- Public Collaborative Workshop (WS) #6 Presentation
- WS#6 Results Presentation
- DVD of WS#6 Television Program

The first meeting was held at the Adam's Mark Hotel, Buffalo, NY. The purpose of the first meeting was to introduce the jury process, develop a set of ground rules, develop a decision making process, determine if additional public input was needed, and brief the jury on the technical material. See **Appendix E** for the meeting agenda and notes.

At the meeting, the jury finalized the Ground Rules (see **Appendix A**), reached an agreement in principle on the decision making process, and determined that Public Collaborative Workshop #7 was not needed at that time – although the jury retained the option of advancing this workshop if they determined later that it was necessary. The consensus opinion of the jury was that there was a substantial amount of public input to date in the process related to the recommendations to be made. This input was clear and the jury had no new questions at this time to put to the public. The jury also decided that the next meeting would address the companion versus replacement bridge issue.

B. Meeting #2 – October 6, 2005

Prior to Meeting #2, the jury had the opportunity to develop a discussion paper on replacement and companion bridge issues with the assistance of the technical team. The discussion paper addressed the advantages and disadvantages of each concept. See **Appendix C** for the technical discussion papers.

Meeting #2 was held at the Holiday Inn, Fort Erie, Ontario. At the meeting, the jury framed a vision for the crossing consistent with years of public input and technical work. The vision called for a great crossing experience that symbolically represents the strengths and imagination of the bi-national community. The jury also called for a lasting signature or landmark expression.

The members discussed issues of vision, aesthetics, public input, bridge function, costs, security and history as they evaluated the ability of bridge concepts to meet all of those considerations. Some strongly believed the most beautiful and long term sustainable solution was to be found in a new replacement bridge while others were persuaded that the beauty and history of the existing bridge, as well as its current condition, warranted its retention.

The jury finally voted to retain the existing Peace Bridge but construct an iconic or landmark bridge that would fulfill the vision. This left sixteen (16) different companion bridge concepts for consideration at the next meeting. See **Appendix E** for the meeting agenda and transcript and post meeting press release.

The jury decided that the next meeting would consider the full range of specific bridge concepts instead of only bridges by type. This was a deviation from the original decision tree. Jurors determined that they would prefer to consider all of the remaining bridge concepts. In advance of the meeting, the technical team was charged with developing a technical discussion paper for each bridge type; segmental; arch; and cable stay.

C. Meeting #3 – November 3, 2005

Meeting #3 was held at the Adam's Mark Hotel, Buffalo, NY. The jury considered the remaining sixteen (16) companion bridge concepts. The jury discussed issues of vision, aesthetics, public input, bridge function, costs, security and history as they evaluated the ability of bridge concepts to meet all of those considerations. See **Appendix C** for the technical discussion paper for each bridge type.

After the comprehensive discussion and consideration, the jury held a straw vote using dots, where each juror was given 5 dots, and asked to place as many or few dots on those concepts they felt best met all considerations. It was readily apparent that the jury had a high degree of consensus with two cable stayed structures capturing a significant majority of votes, with three other concepts garnering a moderate amount of interest, and with the jury agreeing to carry a sixth concept which had less support. The remaining ten (10) concepts were eliminated from further consideration by unanimous consent.

The jury decided to exclude from consideration the "twin span", segmental bridges, and most of the arched bridges. The vast majority of the jury supported a cable stay bridge choice and would continue deliberating between two and three tower concepts at the next meeting. The three span arch bridge was also retained for further consideration. See **Appendix E** for the meeting agenda and transcript.

Prior to the final meeting the jury charged the technical team with preparing detailed visualizations, animations, and technical summaries for the six remaining concepts.

D. Meeting #4 – December 1, 2005

In advance of Meeting #4, the technical team developed a technical discussion paper including the potential composition of each structure type. In addition, the jury requested technical discussion of potential design refinements such as curving the structure. Meeting #4 was held at the Holiday Inn, Fort Erie, Ontario. The jury was given the opportunity to view each of the remaining concepts in Real-Time 3D. This advanced visualization allowed jurors to view each concept in a virtual environment from any location, as well as virtually driving around and across each bridge.

The jury discussed in detail each of the concepts and how each concept did or did not meet the vision the jury had established and the technical considerations. After the discussion, a straw vote using three dots per juror was held to narrow the six alternatives down. This resulted in two bridge concepts (No. 6 and 8) being chosen. These concepts were then further discussed and viewed in the 3D environment. Finally, each eligible juror voted for their preferred concept resulting in a vote of 22 for Concept No. 6 and 5 for Concept No. 8.

The final recommended bridge design is discussed in detail below in **Section IV**. After identifying the recommended bridge design, the jury considered potential refinements. These refinements are discussed in more detail in **Section V**.

III. Recommendation

After due consideration and deliberation of the charge given the jury, the project goals and objectives, and the vision developed by the jury, the jury recommends a Two Tower Cable Stay Companion Bridge design – Concept No. 6.

This concept has two needle shaped towers that straddle the roadway, supporting a main span of 500 meters (1,600 feet). One tower is located on the western shore and the other is located on the west side of the Black Rock Canal; both have a height of approximately



173 meters (567 feet). The cables connect to the outside edges of the roadway and run to the outside face of the towers near the base, which transition to the central spindle near the top.

This concept was considered by the jury to most closely meet the vision and considerations providing a simple and elegant structure that provides a great crossing experience while respecting and maintaining a clear view of the existing bridge.

IV. Enhancement Recommendations

At Meeting #3, potential concept enhancements were discussed. The jury charged the technical team with providing a discussion of each of those enhancements (see **Appendix C**) in the Meeting #4 discussion paper. Once the final bridge design recommendation was made, the jury discussed the previously noted enhancements as well as others. The jury discussed the previously noted consideration for curving the roadway away from the existing bridge. It was the consensus of the jury that the recommended structure did not detract from the existing structure in a way that encouraged consideration of the curved roadway and therefore dropped this considered enhancement.

The following list of recommended enhancements was then discussed and all jurors expressed consensus.

A. Cable Stay Tower Sculpting

Consideration should be given to a more sculpted look to the towers – resulting in a smoother less angular shape. This could include smoothing out the edge lines and angles; creating more of an arch where the roadway passes through the towers; and, considering the shape of the intersection between the rounded portion of the upper tower and the square lower portion of the tower.

B. Final Design Considerations

All aspects of the design should preserve and reflect the simplicity and elegance of the design in all elements, including roadway lighting, decorative lighting, directional signing, cable stay anchorage details, limiting signing structures across the main span that may obstruct the views, etc.

Security should be a primary consideration during design of the structure - at the forefront of design - consistent with vision of simplicity and elegance.

Surface color should complement the existing bridge.

C. Crossing Experience

Pedestrian/bicycle experience – pay close attention to the separation of sidewalks from roadway.

Vehicular experience – consider transparent railings and other efforts to maintain an open vista to the water similar to the existing bridge.

D. Environmental

Decorative lighting and other features in the towers and cable stay array should be sensitive to bird migration patterns and reduce the potential for bird strikes.

E. Aesthetic Elements

Consideration should be given to fully integrating art into the development of the bridge in a manner consistent with the simplicity and elegance of the concept design. Discussion included consideration of features in the arch below the towers, as well as in the details of side walks, railings, lighting, signage, etc

F. Structure Name

Careful consideration should be given to naming the structure or crossing. While not in the charge of this jury, the members believed that naming the bridge has many implications related to branding the crossing experience and describing it to the world. Consideration should be given to a process of naming that includes continued public dialogue on the symbol of the bridges and its importance to the region.

Appendix A – Ground Rules

Appendix B – Decision Tree

Appendix C – Technical Discussion Papers

Appendix D – RFI's

**Appendix E – Meeting Agendas, Notes & Transcripts,
Press Releases**