



Request for Proposal: Teaching Aid for Van Buren Bridge Project

August 8, 2022

The American Institute of Steel Construction (AISC) is seeking proposals to develop a series of university-level educational videos featuring a historic steel bridge that is being replaced in Corvallis, Oregon.

Background

Built in 1913, the Van Buren Bridge is a steel bridge that carries traffic across the Willamette River in Corvallis, Oregon. The structure has been deemed functionally obsolete with concerns about the width of the bridge, the effects of bridge scour, and the safety features, including the lack of load path redundancy. It is also considered seismically vulnerable due to the era in which it was designed and constructed. A detailed fatigue and fracture evaluation in 1995 estimated a remaining service life of ten years, and no strengthening activities have been performed. The bridge is scheduled to be removed in summer 2023 and will be replaced by a new steel bridge. More information about the project from the Oregon Department of Transportation (ODOT) can be [found here](#).

Prior to demolition of the existing structure, there is an opportunity to capture video footage of the bridge for use as an educational tool.

Objective

AISC maintains a [steel teaching aid library](#) for educators, students, and others within the academic engineering community to download and use free of charge. Recent feedback from educators has shown a desire for useful and engaging teaching tools, including videos and real-world examples.

The objective of this project is to produce a series of short videos featuring the Van Buren Bridge that could be used in university-level courses, including (but not limited to) statics, mechanics of materials, structural analysis, steel design, bridge design, and advanced steel design courses. The videos may also be used by faculty advisors of the [Student Steel Bridge Competition](#). Each video will be part of a module that includes at least one activity to accompany each video, such as a homework assignment, guided discussion, or game.

**Request for Proposal: Teaching Aid for Van Buren Bridge Project
American Institute of Steel Construction**

Deliverables and Overall Schedule

A videographer (funded by AISC) will capture the video footage and will edit the final videos. The developer will need to coordinate with the videographer about the specific footage and will need to provide scripting and narration. AISC will connect the developer with the demolition engineer and the structural engineer for the new structure and may work with these parties to develop content. The developer will also be responsible for developing supplemental educational materials to accompany each video.

The project deliverables include:

- 5-10 videos that are technical in nature. Each video should be no longer than 10 minutes.
- Activity to accompany each video module. Examples include homework, guided discussion, game, or other activity.
- Supplemental content for educators, such as instructions for the activities and homework solutions.

The video footage will need to be captured before demolition of the existing structure, which will likely be summer 2023. The teaching aid should be finalized by fall 2023.

Required Content

The following topics should be included within the series of videos. The proposer may organize the content as they best see fit (i.e. within one or more modules):

- History of the existing bridge
- Description of the existing bridge structure, load path, and flow of forces
- Discussion about the longevity, recyclability, and sustainability of the original steel structure
- Overview of the new bridge design, including the benefits of selecting a steel bridge for the replacement
- Overview of the deconstruction process

Suggested Other Topics

The developer may include other topics as part of the series. Example topics include:

- Special loading conditions, such as fatigue and seismic
- Structural stability, including during construction
- Material testing*
- Redundancy
- Interviews with the design team and/or ODOT regarding the assessment of the existing structure and the design of the new structure
- Interview with demolition contractor
- Demonstration of structural behavior and/or graphical analysis using structural modeling (through coordination with the design team)

** If the developer is interested, AISC can make introductions to representatives at Wiss, Janney, Elstner Associates, Inc. who offered to donate services for basic material testing and more complex testing at cost.*

**Request for Proposal: Teaching Aid for Van Buren Bridge Project
American Institute of Steel Construction**

Instructions for Proposals

AISC will evaluate the proposals along with the AISC Partners in Education Committee and provide funding in the form of a grant to a successful proposal. The teaching aid will be made available free of charge to all AISC-member educators for use in their courses, with credit to AISC and the author. All teaching aids will become the property of AISC and can be used for educational purposes through a Creative Commons license. [View a sample contract here.](#)

The proposal should include:

- List of video modules, including general content for each video, associated activity, and intended audience
- Project schedule
- Budget, including any costs for travel as a separate line item
- CV including any relevant experience

AISC welcomes collaborative proposals in addition to individual submittals.

Proposals are due by September 30, 2022 by email to Kristi Sattler at sattler@aisc.org. The award will be determined by October 31, 2022 and paid upon completion of the teaching aid. AISC and the Partners in Education Committee will provide a technical review of the teaching aid through 2-3 virtual meetings. AISC will provide any required templates.

Grant Benefits

AISC may invite the developer to present their work at a future educator session at NASCC (travel covered by AISC). The teaching aid will be announced at an NASCC educator session and publicized in the monthly Educator Tip Sheet.

AISC can also offer a letter of support for the developer to gain additional funding from their university or other entities.

Position on Overhead Expenses

AISC is a not-for-profit association with members from across the structural steel construction community, including producers and fabricators. The majority of the AISC members are engineers. We distribute our specifications free for their use.

The primary goal of those specifications is the reliability of structures and through that the safety of the public. Because AISC does not use the teaching aids for profit and because our work is performed in the interest of public safety, grants shall not be used for indirect cost and overhead expenses at educational institutions. AISC may choose to fund grants or gifts at its discretion.