WEST VIRGINIA
BRIDGE DESIGN & BUILD CONTEST

2027 OFFICIAL RULES

CONTEST SOFTWARE



CONTEST SPONSORS

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1 WEST VIRGINIA BRIDGE DESIGN & BUILD CONTEST INFORMATION

1.1 OVERVIEW

The West Virginia Bridge Design & Build Contest (WVBDB) is a statewide contest intended to conduct outreach to middle school and high school students considering a career track in STEM occupations. The contest primarily covers bridge design, but teams invited to the Finals will also compete in a balsa-wood bridge build.

The Qualifying Round of the 2027 West Virginia Bridge Design & Build Contest will ***begin on Friday, October 30, 2026, and end on Friday, February 26, 2027, at 11:59 PM EST***. All teams must sign up at https://wvbdb.com/. All bridge design files must be uploaded through this website to officially enter the contest. All contest and event updates will also be provided on the website.

The **top 25** (approximate) teams with the lowest cost designs will be invited to participate in the Finals (with at least 5 teams from each Division) that will be held at the WVU Institute of Technology Campus in Beckley, WV. ***Finalists will be notified by email on Tuesday, March 2, 2027***, with invitation and details of the Finals event.

1.2 OVERSIGHT AND COORDINATION

The WV Department of Transportation, Division of Highways is coordinating the 2027 West Virginia Bridge Design & Build Contest. The 2027 advisory board members are:

NAME	ORGANIZATION
Hussein Elkhansa	WV Department of Transportation
Margaret Smith	WV Department of Transportation
Troy R Morgan	WV Department of Transportation
Rachel Eades	WV Department of Education
Kase Poling	WVU Institute of Technology
Benjy Simpson et al.	Bridge Walk LLC
Lesley Rosier-Tabor	WV State Board of Registration for Professional Engineers

If you have any questions about the 2027 West Virginia Bridge Design & Build Contest, please contact dotwvbdb@wv.gov.

1.3 RULES AND ELIGIBILITY

1) Students must be attending a public or private West Virginia school or must be home-schooled at a West Virginia address.
2) Students from grades 6-12 are eligible to participate.
3) Teams must be comprised of 2-3 eligible students from the same school.
   a) Home school students may be on teams with other home school students or students from a private or public school.
   b) The following are a noncomprehensive list of team combinations:
      i) One home school student, and one public school student,
      ii) One home school student, and two public school students from the same school,
      iii) Two public school students from the same school,
      iv) Three private school students from the same school.
4) All eligible students will be placed into one of three contest divisions—Middle School Division, High School Lower Division, or High School Upper Division—based solely on their grade level.
   a) Eligible students in grades 6-8 will be registered in the Middle School Division.
   b) Eligible students in grades 9-10 will be registered in the High School Lower Division.
   c) Eligible students in grades 11-12 will be registered in the High School Upper Division.
5) The division of each team is determined by the student with the highest grade level for competition purposes.
   a) For Example, if a team consists of a student in grade 8 and a student in grade 9, the team will participate in the High School Lower Division (Grades 9-10).
6) Each student must sign up using the contest website https://wvbdb.com/.
   a) Students must have access to the email that is used to register for the competition to verify their account. Any official communication from the WVBDB team will be made via email.
7) Each student must complete onboarding after verifying their email address.
   a) **Student and School Information:** Students must provide their first and last name, name of School, grade, and county.
      i) Home School students should enter “Home School” as their “School Name”
   b) **Teacher/Coach/Parent Information**: Students must provide their teacher/coach’s name and contact email. Home school students must provide their parent/guardian’s name and contact email.
   c) **Changes to Registration**: Teams wishing to change the email associated with their account or any other account information must contact dotwvbdb@wv.gov and allow two (2) business days for comment.
8) Each student must create or join a team using the application.
   a) **Team Names**: Names should be from 4 to 20 characters long. Team names should be appropriate for a school assignment. Teachers and parents/guardians can review

team names and request that a team name be changed or eliminated. The Advisory Board will review these requests and approve or disapprove within two (2) business days. The Advisory Board reserves the discretionary right to change a team name, at any time.

9) To officially enter the contest, students must create at least one bridge design file that passes the simulated load test and submit it through our website https://wvbdb.com/.
   a) Students must create their designs using the **Bridge Designer 2027** application that can be launched from the contest website.
   b) **Submission Requirements**:
      i) Teams must have a valid team name associated with each design.
      ii) Teams must have at least 2 students to submit a design.
      iii) Designs must be submitted through the website using the Bridge Designer 2027 application.
      iv) **Designs that do not meet these requirements will be disqualified.**
   c) **Ties**:
      i) Ties are unlikely but are not impossible. A tie is defined as: two or more separate submissions which have the exact same final cost.
      ii) In the case of a tie, the tie breaker will be decided by the time of the submission of the designs. The design which was received first will receive the higher overall ranking on the leaderboard.
      iii) Each subsequent tied submission will then receive the next highest ranking.
      iv) Example: Three submissions are received on the same day, all having a final overall cost of $743,210.55.
      Submission A was received at 9:43 AM, Submission B was received at 2:03 PM, and Submission C was received at 8:45 AM.
      The leaderboard ranking would be:
      1st – Submission C (8:45 AM)
      2nd – Submission A (9:43 AM)
      3rd – Submission B (2:03 PM)
   d) **Ineligible Submissions**:
      i) Submissions created by previous versions of the application will be disqualified.
      ii) Design files that do not pass a load test will be disqualified.
10) Students are expected to perform their own work during the Qualifying Round and Finals.
11) The contest advisory board has discretion to disqualify students who were caught cheating or exhibiting behavior that is not representative of the contest values of teamwork and honesty.

1.4 CONTEST SCHEDULE

The full schedule for the 2027 West Virginia Bridge Design & Build Contest is shown in the table below and will be updated on the website accordingly. Registration can be completed at https://wvbdb.com/. The Qualifying Round will ***END on Friday, February 26, 2027, at 11:59 PM EST***. The **top 25** (approximate) teams with the lowest cost designs will be invited by email to participate in the Finals Event.

EVENT	DATES
Registration	October 30, 2026 – February 26, 2027
Qualifying Round	October 30, 2026 – February 26, 2027
Last Day to Request Classroom Assistance	February 12, 2027
Email Notification to Finalists	March 2, 2027
Deadline to RSVP to Finals Event	March 9, 2027
Finals Event Weekend	April 9-11, 2027
Finals (Software & Balsa Build)	April 10, 2027

2 QUALIFYING ROUND

2.1 BRIDGE DESIGNER APPLICATION

The **Bridge Designer 2027** application can be launched from the contest website. The information below provides an overview of the application. Additional tutorials are provided on the website:

- Students will be presented with a requirement to design a bridge to carry a given load from a roadway across a river.
- Students may choose from a wide variety of site configurations for their bridge. Each will carry the load in a different way, and each will have a different site cost.
- Students will develop a design for their bridge by digitally creating and customizing various design aspects of it on the computer using the Bridge Designer 2027 application.
- Once the design is complete, the software will test the bridge to see if it is strong enough to carry the specified highway load. This test includes a full-color animation showing a truck crossing the student's bridge design. If the design is strong enough, the truck will be able to cross the bridge successfully. If not, the structure will collapse.
- If the bridge design collapses, it can be strengthened by changing the types of steel and the sizes of the structural components that make up the bridge, or by changing the configuration of the bridge itself.

- Once the bridge can successfully carry the highway load without collapsing, the student can then refine the design with the objective of minimizing its cost while still ensuring it is strong enough to carry the specified loads.

2.2 REQUEST ASSISTANCE

Assistance can be requested up to Friday, February 12, 2027. Teachers may submit a request for an engineering professional to explain how to use **Bridge Designer 2027** and teach some aspects of bridge design. The assistance will be provided by an undergraduate engineering student involved in an American Society of Civil Engineer (ASCE) student chapter (e.g., Bluefield State University, Fairmont State University, Marshall University, West Virginia University, or WVU Institute of Technology), a West Virginia Department of Transportation employee, or another professional engineer volunteer. Requests can be submitted by contacting dotwvbdb@wv.gov.

2.3 TEAM REGISTRATION

Registration for the 2027 West Virginia Design & Build Contest must be completed on the contest website here: https://wvbdb.com/. Any changes to emails or other team member's information provided during registration can be made up to two (2) business days prior to the end of the qualifying round by contacting dotwvbdb@wv.gov.

2.4 BRIDGE DESIGNER FILE SUBMISSION

The 2027 West Virginia Bridge Design & Build Contest will utilize Bridge Designer 2027 application located on our website: https://wvbdb.com/ . Bridge design files must be submitted through the contest website to officially enter the contest.

2.5 FINALIST SELECTION

The **top 25** (approximate) teams with the lowest cost designs will be invited to participate in the Finals. The goal is to have 75 students participate in the Finals. An estimate of 25 is given with the assumption that the 25 least expensive designs constitute team entries of 5 teams from each Division.

Finalists will be notified by email on Tuesday, March 2, 2027, with an invitation. ***Finalists will have until Tuesday March 9, 2027***, to accept their invitation and RSVP to the event.

3 FINALS

Hosted at the WVU Institute of Technology campus in Beckley, WV, the Finals Event consists of two separate competitions: a computer lab design contest utilizing **Bridge Designer 2027**, and a balsa-wood bridge build and load testing with a brief Q and A session. Comprehensive details concerning the balsa-wood bridge build, presentation requirements, scheduling, and locations will be provided directly to all finalists.

The Finals event will be heavily photographed and recorded. By participating in the Finals of the Bridge Design and Build Contest, you acknowledge that you have been informed that you may be photographed, filmed, or otherwise recorded. Contact dotwvbdb@wv.gov with questions.

4 PRIZES

All students who are invited to and attend the Finals Event and awards ceremony will be awarded a prize. Students can win more by placing 1st, 2nd or 3rd in both computer lab design and balsa-wood build categories. Finalists will be awarded between $100.00 and $300.00 per team, depending on participation. All prizes will be in the form of gift cards. The Top 3 prize winners of each category will also be required to fill out a W-9 tax form and return it to:

Attn: Kase Poling, Ph.D., ENV SP
WV University Institute of Technology
Department of Civil Engineering and Construction Management
410 Neville Street
Beckley, WV 25801

Awards will **only** be given to those students who participate in the finals events and who are able to attend the awards ceremony following the competitions. Awards will NOT be given to students who do not attend the finals event and awards ceremony in person. Additional information regarding prizes will be provided during the Finals Event.

5 DISCLAIMER

The Contest Organizers & Advisory Board have made every effort to adequately explain the contest format and corresponding rules within this document. However, they reserve the right to change the rules and prizes without notice up to the Finals Round. Any changes will be communicated to the contest participants on the website and via email. ***Please note all decisions by the advisory board and judges are FINAL.***