

TRANSPORTATION

Competition Rules

ASCE Mid-Pacific Student Symposium

April 9—11, 2027

Hosted by CSU Fresno & UC Merced

ASCE FRESNO STATE STUDENT CHAPTER

ASCE STUDENT CHAPTER University of California, Merced

Transportation Competition Rules

Competition: Friday, April 9, 2027 (poster walk 9:30 – 11:30 AM; presentations 1:00 – 4:00 PM). All deadlines are 11:59 PM Pacific Time. Questions: ascemidpac2027@gmail.com.

Overview

The objectives of this year's Transportation Competition are to introduce real-world applications of transportation planning, conceptual traffic design, and traffic operational analysis while balancing safety, equity, and multimodal connectivity in the era of the upcoming high-speed rail.

Competition Prompt

As California High-Speed Rail prepares for service, micromobility options like e-scooters and bicycles are skyrocketing in popularity. In Downtown Fresno, the historic Chinatown neighborhood and Fresno Station District are undergoing rapid revitalization to prepare for an influx of passengers, transit users, pedestrians, and cyclists. The City of Fresno and the High-Speed Rail Authority have tasked your firm with completely redesigning the multi-modal corridor connecting the future station to U Street and Tulare Street. Your proposal must analyze traffic volumes, safety, and equity to deliver comprehensive intersection designs that prioritize pedestrian safety and sustainability.

Key Dates (2027)

Item	Date
Team registration (regular, $150 per team)	Tuesday, December 1, 2026
Team registration (late, $180 per team)	Monday, January 18, 2027 (checks must be postmarked by this date)
Attendee registration and team roster due	Monday, February 15
Request for Information (RFI) deadline	Friday, February 19
RFI answers posted	Friday, February 26
Design report due (PDF)	Friday, March 26
Late individual registration deadline	Tuesday, March 30
Poster (PDF) and presentation (.pptx) due	Friday, April 2
Captains' meeting, online (informational only)	Thursday, April 8, 7:00 – 8:00 PM
Captains' meeting, in person (mandatory; captain or designee)	Friday, April 9, 8:30 – 9:15 AM
Poster walk	Friday, April 9, 9:30 – 11:30 AM
Presentations	Friday, April 9, 1:00 – 4:00 PM

Registration, roster, and chapter-standing deadlines follow Mailer 1. All submission deadlines are 11:59 PM Pacific Time. Final times and locations will be confirmed in Mailer 2 and on the symposium website.

Eligibility and Participant Rules

1. Each university may enter only one team.
2. Presentation teams must have a minimum of three and a maximum of eight members.
   a. There is no limit on the number of students who can work on the report.
3. Every team member must be an ASCE student member and a registered attendee of the ASCE Mid-Pacific Student Symposium, and the university's chapter must be in good standing (annual report and dues submitted by February 1).
4. Students may compete in more than one competition but may captain only one team. Because each competition demands significant time before and during the symposium, students are encouraged to focus on one competition.
5. All presentation team members must be present at the poster walk.
6. All participants are expected to follow the professionalism and sanctions policies in Mailer 1. Events are drug and alcohol free.

Submissions and File Naming

Email all deliverables to the general symposium address below. Use the subject line shown and the exact file names (replace "UniversityName" with your university). The competition chair will email a confirmation when each file is received.

Deliverable	Format	Due Date	Subject Line / File Name
Design Report	PDF	Fri, Mar 26	Subject: UniversityName_Transportation Report File: UniversityName_Report_Transportation.pdf
Poster	PDF	Fri, Apr 2	Subject: UniversityName_Transportation Poster File: UniversityName_Poster_Transportation.pdf
Presentation	PowerPoint (.pptx)	Fri, Apr 2	Subject: UniversityName_Transportation Presentation File: UniversityName_Presentation_Transportation.pptx

Late Policy

A late submission loses 10 points for each of the first three days (up to 72 hours late) and an additional 20 points on the fourth day (72 to 96 hours late), for a maximum loss of 50 points. Submissions more than 96 hours late will not be accepted. The penalty applies separately to each deadline: the design report (March 26) and the poster and presentation (April 2). Submitting the poster and presentation late on the same day counts as one late submission, so the maximum total late penalty is 100 points. This policy replaces all earlier late penalties.

Requests for Information (RFIs) and Data Sources

Send questions and requests for information by **Friday, February 19**. Answers will be posted to all teams on **Friday, February 26**. Teams are expected to gather their own data (traffic volumes, crash history, demographics, and base mapping) from public sources, as practicing engineers would. The Suggested References section lists City of Fresno standards and plans, regional and state data sources, and design guides to start from. Questions about finding or using these sources may be sent as RFIs.

Contact

Send all questions about this competition to ascemidpac2027@gmail.com. Replies may take up to 3 business days. Messages sent to any other account will not be addressed.

Background

The High-Speed Rail station area in Downtown Fresno is one of the most significant transportation hubs in the San Joaquin Valley. The station is the core node of the Merced to Fresno High-Speed Rail segment, part of the Central Valley initial operating service. Within approximately half a mile of the station are Chukchansi Park, the Fresno County and Federal Courthouse, the Community Regional Medical Center, Fresno Area Express (FAX) rapid transit stops, and Fresno City Hall. The station anchors what planners call the “Fresno Station District,” a half-mile radius encompassing the Fulton Corridor, Convention Center, Warnors Theatre, and Chinatown, all within a 10 minute walk. The corridor supports a diverse mix of high-speed rail passengers, transit users, pedestrians, cyclists, and motorists.

The surrounding area gains additional prominence from the historic Chinatown neighborhood encompassing the station site. Established in 1872 prior to Fresno’s incorporation, Chinatown initially sheltered Chinese laborers key to building the city, later welcoming successive populations of Japanese, Armenian, Mexican, Portuguese, and Basque settlers. At present, this historic district is experiencing major revitalization through the Fresno Station Early Works Project. These improvements feature utilities, sidewalks, drainage, landscaping, lighting, solar photovoltaic systems, EV chargers, permeable pavement, and bus bays with electric chargers.

Significant transformations are currently shaping the corridor’s transit networks. A key milestone is the Tulare Street underpass and grade separation between G and H streets, completed in 2025, which carries a two-lane roadway more than 20 feet below the Union Pacific lines and the future high-speed rail corridor, alongside bike lanes and pedestrian access. Complementing these changes, safety upgrades at Tulare and U streets introduced protected left-turn signals and refined pedestrian infrastructure, underscoring local efforts to bolster safety and multimodal access ahead of high-speed rail operations.

Problem Statement



Figure 1: Project Area

As California High-Speed Rail prepares to begin service in the Central Valley, e-scooters and bikes are becoming ever more popular, all while the Fresno Station District continues to take shape around the future station. The City of Fresno and the California High-Speed Rail Authority are asking your firm to redesign the corridor connecting the future High-Speed Rail Fresno Station to the intersection at U Street and Tulare Street to accommodate these new users, promote safety, and ensure sustainability for all.

Project Requirements

The City of Fresno and the California High-Speed Rail Authority have asked your firm to provide designs for a renovated corridor, as well as an analysis of its effects and a proposal for solutions. At a minimum, the analysis must contain the following:

1. Project Description
2. Existing Conditions Analysis
   a. Traffic volumes, safety data, mode split
3. Recommended transportation improvements in the corridor
   a. Introduce considered alternatives as well as your final design.

4. Preliminary Site Design Drawings for the intersections below in the chosen design. The drawings should show proposed improvements and project constraints, and contain a title block. Sheet size is ANSI B.
    a. Tulare Street & H Street
    b. Tulare Street & P Street
    c. Tulare Street & U Street
    d. Tulare Street & Van Ness Ave
5. Typical Section Designs for the roadways below in the chosen design. The sections may be done with CAD software, Streetmix, or any preferred drawing software.
    a. H Street to Van Ness Avenue
    b. Van Ness Avenue to P Street
    c. P Street to U Street
6. Safety and Equity Analysis
    a. Safety Mitigation Measures: discuss strategies to accommodate safety impacts to the surrounding community.
    b. Equity Mitigation Measures: strategies to increase equity in the surrounding community.
7. Micromobility Integration
    a. Propose strategies for integrating an increase in micromobility and microtransit.
8. Sustainability
    a. Include a VMT analysis for emissions and other potential sustainability targets.
9. Cost Estimate
    a. Provide a breakdown of cost for proposed improvements, final design, and construction management.

Design Report: 185 Points

The report must address all items listed in the Project Requirements. The format below is intended to guide teams; see the Scoring section for the point breakdown.

Formatting

- **Page limit:** 25 pages maximum for the body (Introduction through Cost Summary). Shorter reports are acceptable. The cover page, table of contents, references, and appendices are not counted.
- **Font and margins:** 12-point Times New Roman, single-spaced, 1-inch margins on all sides. Figure and table captions must be at least 10-point.
- **Paper:** 8.5" × 11" portrait for the body. Drawings in Appendix A use ANSI B (11" × 17") sheets.
- **Page numbers:** Number all pages. Appendix pages use the appendix letter and page number (A1, A2, B1, B2, …).

Report Content

1. Cover Page
    a. Must include: University, names of all team members, project name, the report title “2027 ASCE Mid-Pacific Student Transportation Competition,” and submission date.
2. Table of Contents
    a. A page number must be assigned to each section. Subsections may be included.

3. Introduction
    a. A brief description and purpose of your project, design constraints, and parameters affecting your planning process.
4. Project Summary and Recommendations
    a. Summarize your project's features and outcomes, and the considerations that went into choosing the final design.
5. Design
    a. Discuss design considerations and parameters, including (but not limited to) cost assumptions and pedestrian and bicyclist assumptions. Provide references, reasonable justification, or calculations.
6. Safety and Equity Analysis
    a. Prioritize safety for pedestrians, cyclists, and all other users through thoughtful design and traffic management, and reflect on the cultural diversity and social fabric of the communities served by the corridor.
7. Micromobility Integration
    a. Propose strategies to integrate increased micromobility and microtransit.
8. Sustainability
    a. Incorporate green infrastructure, energy-efficient systems, and climate-conscious materials.
9. References
    a. List references used in the design and analysis of the project.
10. Appendices
    a. Appendix A: Preliminary Design Drawings and Typical Section Designs
    b. Appendix B: Cost Estimate. Provide a cost breakdown for the proposed improvements, final design, and construction management, using the Caltrans Contract Cost Database to obtain unit costs.
    c. Appendix C: Technical Appendix. Provide results displayed through figures, tables, and hand calculations to software output, with reference to the appropriately used manuals.

Presentation: 45 Points

Each team will give a **15-minute presentation**, followed by a **10-minute question-and-answer session** with a panel of judges (25 minutes per team). Your presentation should convince the City of Fresno, the California High-Speed Rail Authority, and the general public that this is the solution they should adopt and invest in, and should include an overview of the project.

Presentations take place on **Friday, April 9, from 1:00 to 4:00 PM**. At 25 minutes per team, each room can host about six teams. Teams will be assigned to a room and a time slot after registration closes. If registration exceeds capacity, additional rooms will be added or the number of teams may be capped.

Presenter Requirements

- A minimum of three team members must speak during the presentation.
- All team members participating in the presentation must be available for the judges' questions.
- Dress code is business professional.
- Videos are not permitted, and no speaking parts may be pre-recorded.
- No handouts or other materials may be given to the judges.
- Presentations must be submitted as a .pptx file by April 2. Teams present from the submitted file.

Time Penalties

Organizers will keep time. Each team has a fixed 25-minute slot: a 15-minute presentation followed by a 10-minute question-and-answer session.

- **Overtime:** for every 30 seconds (or part of 30 seconds) past 15:00, the deduction increases by one point per interval (1, 2, 3, then 4 points), for a maximum total loss of 10 points. The presentation will be stopped at 17:00. Because the 25-minute slot does not change, any time used past 15:00 comes out of the Q&A session.
- **Undertime:** presentations between 13:00 and 15:00 are not penalized. For every 30 seconds (or part of 30 seconds) under 13:00, the deduction increases by one point per interval (1, 2, 3, 4, 5), for a maximum total loss of 20 points, reached at 10:29 or shorter. Unused presentation time is not added to the Q&A session.

Overtime deductions

Presentation length	Deduction for interval	Total deduction	Q&A time remaining
15:01 – 15:30	1	1	9:30
15:31 – 16:00	2	3	9:00
16:01 – 16:30	3	6	8:30
16:31 – 17:00	4	10	8:00

Undertime deductions

Presentation length	Deduction for interval	Total deduction	Time under 13:00
13:00 – 15:00	0	0	None (no penalty)
12:30 – 12:59	1	1	0:01 – 0:30
12:00 – 12:29	2	3	0:31 – 1:00
11:30 – 11:59	3	6	1:01 – 1:30
11:00 – 11:29	4	10	1:31 – 2:00
10:30 – 10:59	5	15	2:01 – 2:30
10:00 – 10:29	5	20 (maximum)	2:31 – 3:00
Under 10:00	—	20 (maximum)	More than 3:00

Poster: 20 Points

In addition to the presentation, each team must prepare a poster that outlines the team's design. Each poster must display, at minimum: school name, participants, layout of the project, roadway cross-sections, and total cost.

- **Size:** 36" × 24" (landscape or portrait).

- **Poster walk:** Friday, April 9, 9:30 – 11:30 AM. Setup is from 8:00 to 9:30 AM, and the location will be announced in Mailer 2 and on the symposium website.
- Each team must print and bring its own poster and a poster stand.
- All presentation team members must be present at the poster walk to answer judges' questions.
- A PDF of the poster is also due April 2 (see Submissions and File Naming).

Scoring

Total: 250 points (Design Report 185, Presentation 45, Poster 20).

Deliverable	Category	Points
Written Design Report	Cover Page	5
	Table of Contents	5
	Introduction	10
	Recommendations	20
	Intersection Design	25
	Section Design	25
	Safety & Equity Analysis	25
	Micromobility Integration	15
	Sustainability	15
	Cost Estimate	20
	References	5
	Technical Appendix	5
	Clarity, Quality & Neatness of Technical Writing	10
	Points Available	**185**
Presentation	Quality of Presentation	25
	Quality of PowerPoint	10
	Quality of Q&A	10
	Points Available	**45**
Poster	Quality of Poster	10
	Quality of Q&A	10
	Points Available	**20**

Deliverable	Category	Points
Deductions	Lateness, per deadline (10 points per day for days 1–3, plus 20 on day 4; not accepted after 96 hours)	up to −50 each (−100 max)
Deductions	Presentation timing (overtime up to 10 points; undertime up to 20 points)	up to −10 / −20
Total		**250**

Competition Schedule and Logistics

The symposium schedule in Mailer 1 is tentative. Final times and rooms will be confirmed in Mailer 2 and on the symposium website.

Date and Time	Event
Thursday, April 8, 7:00 – 8:00 PM	All-competition captains' meeting (online, synchronous). Informational only; attendance is encouraged.
Friday, April 9, 8:30 – 9:15 AM	Transportation captains' meeting (mandatory; captain or designee). Presentation room and time-slot assignments are confirmed.
Friday, April 9, 8:00 – 9:30 AM	Poster setup (location announced in Mailer 2 and on the symposium website).
Friday, April 9, 9:30 – 11:30 AM	Poster walk (shared with Sustainable Solutions). All presentation team members must be present.
Friday, April 9, 1:00 – 4:00 PM	Presentations: 15 minutes plus 10 minutes of questions per team.
Sunday, April 11, 5:00 – 9:00 PM	Awards Ceremony & Banquet (results announced).

Policies

AI Use and Plagiarism

The use of generative artificial intelligence (AI) and natural language processing models (NLP), such as OpenAI's ChatGPT©, is neither encouraged nor discouraged. However, if such models are used, all instances shall be cited as work completed by the respective generative AI/NLP. Failure to cite all instances of generative AI/NLP use will be considered plagiarism.

Plagiarism of any kind will not be tolerated. Teams caught plagiarizing any portion of their submitted work will be disqualified.

Professionalism and Judging

All participants are expected to follow the professionalism and sanctions policies in Mailer 1. The judges follow the rules as published, using reasonable judgment and interpretation. The head judge is the arbiter of any dispute, which may be brought only by the team captain, and decisions of the head judge are final.

Drug and Alcohol-Free Events

The use of drugs and alcohol is prohibited at all ASCE Student Symposium events, including this competition.

Suggested References

These public sources are a starting point. Teams may use any other credible source, cited in the report.

City of Fresno Plans

- **Fulton Corridor Specific Plan:**
  - https://www.fresno.gov/wp-content/uploads/2023/04/161020FCSPFinallowres1-2.pdf
- **Downtown Neighborhoods Community Plan:**
  - https://www.fresno.gov/wp-content/uploads/2023/04/161020DNCPFinallowres1.pdf
- **City of Fresno Active Transportation Plan:**
  - https://www.fresno.gov/publicworks/active-transportation-plan/

GIS and Mapping

- **City of Fresno GIS & Mapping:**
  - https://www.fresno.gov/planning/gis-mapping/
- **Fresno County Maps and GIS Information:**
  - https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/maps-and-gis-information

Traffic, Safety, and Equity Data

- **Transportation Injury Mapping System (TIMS), UC Berkeley SafeTREC (SWITRS crash data):**
  - https://tims.berkeley.edu/
- **CalEnviroScreen 4.0, OEHHA (equity and pollution burden):**
  - https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

Design Guides and Cost Data

- **California MUTCD (latest version):**
  - https://dot.ca.gov/programs/safety-programs/camutcd
- **Caltrans Contract Cost Data:**
  - https://sv08data.dot.ca.gov/contractcost/