

Student Competition Overview & Problem Statement

The University of Calgary is based in Calgary, Alberta, Canada, with four campuses in the Calgary area. The Student Competition will focus on the main campus. The goal of the Sandbox Student Competition is to Develop a Campus Specific Zero Emission Delivery Zone. The plan priority should be to keep goods moving reliably and efficiently to the destination, while balancing the needs of students, residents, faculty, employees, and visitors.

The Plan and Improvements should identify the proposed Zero Emission Delivery Zone within the University of Calgary, while maintaining the existing truck traffic and parking demands of the University. The existing Main campus of University of Calgary is estimated to support 500 truck trips ends daily (500 entering, 500 exiting).

Please note: *The land uses and area west of McLaurin St BW and 39 Street NW, such as the Albera Children's Hospital, (areas west of the Main Campus) are to be excluded from the competition and should not be considered as part of the problem statement, objectives and/or strategies. Please limit the assessment to the areas identified within the Main Campus.*

The final plan submitted should be consistent with Calgary's Goods Movement Strategy and sustainable transportation objectives, specifically: (1) Keeps goods moving reliably and efficiently to their last mile destinations; (2) Reduce conflicts between freight, transit, pedestrians, and cyclists; and (3) make better use of roadway infrastructure.

Introduction to Sustainability

How does ITE define a Zero Emission Zone? A Zero Emission Zone (ZEZ) is commonly defined as a designated area where zero-emission vehicles (such as electric cars, delivery vans, and buses), pedestrians, cyclists, and other zero-emission powered micromobility transportation is permitted without restriction.

How do Truck Restrictions impact Zero Emission Zones? Truck restriction zones are commonly implemented to limit commercial and heavy vehicle traffic to protect local roads, bridges, and neighborhoods. In a campus setting, the goal of this truck restriction is to reduce conflicts between heavy vehicles and the anticipated increase in pedestrian, cyclist and micromobility transportation within the campus.

Zero-emission Delivery Zones in Practice? Zero-emission delivery zones are areas in which only zero-emission vehicles have unrestricted access, with fossil fuel vehicles either prohibited from entry or required to pay a fee for access. Although zero-emission delivery zones can be thought of as large, cordoned off areas, research indicates that they can take many different forms.

Please note: *More Information on ZEZs in practice will be provided during the online webinar.*

Goals & Objectives / Challenge Parameters

1. Identify and describe the needs of the transportation system.
 - a. Develop a vision and goals for the project.
 - b. Identify three (3) specific Risks, Challenges and Barriers in implementing the Zero Emission Delivery Zone and Truck Restriction Zone.

- c. Identify, Discuss and Develop Solutions to those Risks, Challenges and Barriers considered.
2. **Prepare a Planning Approach which responds to the needs for a Develop a Campus Specific Zero Emission Delivery Zone.**
 - a. Identify the primary truck routes currently being utilized and the areas/buildings of the campus which are most significant to the plan.
 - b. Identify Internal Roadways of the Main Campus which are impacted by the zero-emission delivery zone / truck restrictions.
 - c. Establish a common basis for decision-making and justify your approach.
3. **Prepare a plan, encompassing both design and planning strategies at the network level which address truck traffic within the campus.**
 - a. The plan should identify critical areas of improvement on campus (i.e., Identify how exterior and interior Parking Lots L10, L11 and L32 are currently being utilized).
 - b. Which areas of the campus should be redeveloped to support the **Campus Specific Zero Emission Delivery Zone**?
 - c. Identify the necessary Infrastructure Improvements and performance metrics to support both goods movement and sustainability (Zero Emissions).
4. **Demonstrate how your approach, strategies and solutions are transferable to your university or campus.**
 - a. Identify which solutions are transferable, and which are not transferable.
 - b. Explain why and justify your proposed solutions.
 - c. If you attend University of Calgary, you should select Mount Royal University.

Student Scoring Categories:

1. **Technical Memorandum and Approach to Sustainability (20%)**
 - a. Quality of Writing in Technical Memorandum
 - b. Team has established a clear vision and goals.
 - c. Team successfully identifies Risks & Solutions
2. **Proposed Plan to Implement the ZEZ and Truck Restriction Zone (20%)**
3. **Proposed Infrastructure Improvements to support ZEZ and Truck Restriction Zone (20%)**
 - a. Conceptual Plan, Design Decisions, and Improvements are Identified Clearly
 - b. Transportation Improvements are consistent with the goals/vision outlined by the team.
 - c. All improvements Identified are Justified.
4. **Differentiators and Transferability of Plan/Approach (30%)**
 - a. Is there a specific improvement strategy that differentiates this plan/approach?
 - b. How is the overall approach transferable to your university or campus?
 - c. If not transferable, explain.
5. **Conceptual Plan/Graphic (10%)**

- a. Criteria Met the Layout of the Plan
- b. Design Decisions Are Clear and Explained**