CIV498 Design Project 2019

Project Area: Transportation
Project Title: A Data-Driven Approach to Vision Zero
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STUDIO SUMMARY:

In Toronto, a pedestrian is seriously injured or killed every 3 days on our roads. Between 2005 and 2016, there were over 2,100 pedestrians killed or injured in traffic collisions.

These are our friends, colleagues, and family members.

The thing is, traffic collisions aren't accidents, they are preventable events that can be eliminated through smarter street design, targeted enforcement and thoughtful public engagement. This has been shown to be true in Toronto as well as in other cities around the world such as New York, Seattle and Stockholm.

Toronto's first Vision Zero Road Safety Plan acknowledges that deaths and serious injuries on our roads are preventable and outlines clear priorities to ensure that people can travel safely around the city as pedestrians, cyclists, transit users, and drivers. The plan outlines four action areas: infrastructure investments, traffic-safety education and awareness, enforcement activities and leveraging technology

The purpose of the design project is to apply the skills and knowledge developed over the first 3.5 years of Civil Engineering to answer a fundamental question, namely: **How might we use data, design and technology to make all Toronto road users, especially seniors, newcomers and school children, safer immediately, and enable predictive and high priority interventions in the future?**

The scope of the design project is to approach this opportunity first from a strategic level (involving a deep dive into historical collision data combined with many potential other sources to identify a potential set of solutions to an identified problem area in the City) and then from an operational level (designing facilities, selecting technology, and quantifying specific impacts). The project will make specific consideration of solutions that help Toronto's most vulnerable road users, and will focus on learning from lessons from other worldwide jurisdictions combined with innovation out-of-the-box ideas to apply within the Toronto context.

DELIVERABLES:

Project Proposal
Detailed proposal including background (demonstrated understanding of the project), the project scope, goals and objectives of the project, relationship of these to the Vision Zero movement, preliminary (qualitative) analysis of alternatives to be considered, general description of methodology including resources needed, and a draft work plan for the term (including a list of tasks, responsibilities; time allocation; and a timeline complete with milestones and deliverables).

Detailed Methodology
This deliverable will provide a detailed study methodology, elaborating upon the preliminary methodology provided in the proposal. It should include description of all data and software packages that teams will need access to. An overview of available analysis tools will be provided during one of the early studio sessions. The detailed methodology should describe, step-by-step, how the analysis tools and data will be used to inform the design and evaluate its effectiveness.

Interim Oral Presentation
Based on your proposal and detailed methodology, you will prepare a Power Point presentation to be delivered to the rest of the class, along with preliminary results.

Interim Report: Preliminary Results
This report summarizes your preliminary analysis results. Depending on your project, this report will include a detailed justification for your selection of transportation mode/technology/concept including supporting analysis and results, and a description of how the infrastructure will integrate with other existing transportation networks. The remainder of the report should provide a draft plan for the detailed design of one portion of the project.

Final Oral Presentation
The final presentation will provide an overview of the full project including goals and objectives, purpose, methodology, and an overview of the detailed design process and final designs.

Final Report
A written final report documenting your final design and the process/analysis leading to this final design. The report should include a description of the background of the detailed design, the required functionality, the relevant design standards and reference materials, the alternative design concepts generated, and an evaluation of the strengths, weaknesses and limitations of your design and analysis.

GRADING:

Studio Session Participation:	10%
Interim Deliverables (report, memos…etc.) :	30%
Interim Presentation:	10%
Final Report:	40%
Final Presentation:	10%
	100%