

# Problem Statement and Goals

## MTOBridge

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Table 1: Revision History

Date	Developer(s)	Change
9/22/2022	Pedram Yazdini	First Draft

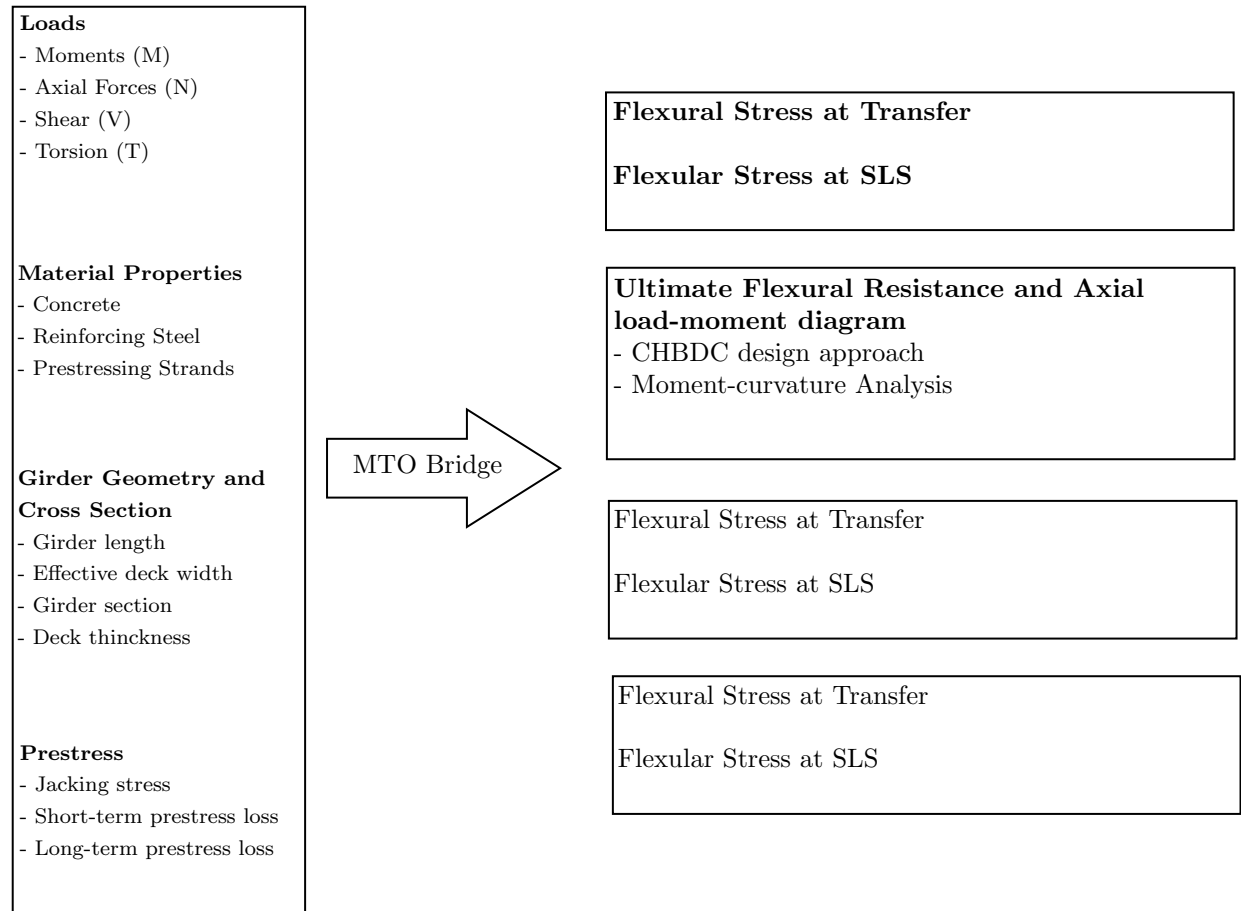
## 1 Problem Statement

The approximate equations included in the Canadian Highway Bridge Design Code (CHBDC) (CSA S6-19) typically feature conservatism and add excessive costs. Although such extra costs are acceptable for designing new bridges, they may lead to unnecessary load restrictions or retrofitting of existing bridges. Using refined methods of analysis to precisely determine the load carrying capacity of bridge members would allow bridge engineers to make well-informed decisions on bridge repair and load posting.

This is an ongoing project in partnership with the Ontario Ministry of Transportation (MTO). The software engine application code has already been developed and validated by a Ph.D. student from the Department of Civil Engineering using MATLAB Editor. The developed MATLAB code is ready to be packaged with other software components (Interactive User Interface (UI), well-defined Input/Output (I/O), and standard bridge section Database). At the end of the project, we will work with the Capstone project team to produce a user manual and case study examples to facilitate the software implementation into evaluation/design practice.

## 1.1 Problem

## 1.2 Inputs and Outputs



## 1.3 Stakeholders

- Ontario Ministry of Transport
- Department of Civil Engineering, McMaster
- Department of Software

## 1.4 Environment

- Compatible with the latest Windows 10 versions (20H1+)

- Fully operational offline
- Requires C++ GNU compiler

## **2 Goals**

## **3 Stretch Goals**