**Canada-UK AI Initiative Intend to Submit document:**

**Title**: Dynamic Transportation Planning: Bringing Agent-Based Models and Reinforcement Learning (DyTraPLAN)

**200-word summary:**

Growing uncertainty from technological developments, raising expectations, and changing demographics are forcing policy makers to make faster, more frequent and shorter-term decisions. Hence, DyTraPLAN project aims to develop a data-driven decision support system to enable urban transport policy makers to response to current urban conditions.

Policy makers have been using data to monitor current urban conditions. However, the challenge is the lack of a scientific approach to incorporate data from various sources into a decision support system that is not limited to monitoring and visualisation of data, but also provide timely and reliable suggestions to policy makers in transport planning. This project will incorporate Actor-Critic Reinforcement Learning (RL) with an Agent-Based Model (ABM) for that objective. The RL algorithm will be developed to inherently work in a simulated environment, through the ABM, that is adapted to the up-to-date data from multiple sources. The data-driven decision support with be co-developed with real policy makers to solve problems of dynamic pricing for clean air charging zones in Leeds and Montreal.